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DERMATOLOGY IN ITS RELATION TO GENERAL MEDICINE.

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BY DR. P. G. UNNA,
OF HAMBURG, GERMANY.

If a specialist is permitted to speak from this exalted place to the representatives of the medical world in all its branches, and desires to remain within his special domain, properly speaking, *one* subject only, viz., he has the relation of his specialty to general medicine.

The true specialist, he who, from pure enthusiasm for his profession, has left the ordinary path of medical practice can travel only one way. Theoretically, and possibly also practically, instructed in all branches of medical science and art, he will devote his entire life to the double object of planting seeds, gathered from the immense field of general medicine, into his special soil, in order to return gratefully to general medicine his harvest—as a ripe fruit. From this point of view, gentlemen, let us consider to-day, the relations of dermatology to general medicine. Let us lay aside all those trifling external circumstances which ordinarily are advanced as an excuse for the existence of special branches. We will forget that the specialist may and must acquire in his small domain, more extensive knowledge, and greater skill than any one engaged in the entire field of medicine. This circumstance which, with iron necessity, has created specialism, is also the one which forever separates it from general medicine. Let us make use to-day of the pleasant fiction that the specialist is created from the growing and ripening conviction of the eminent physician and naturalist, from the ideal wish to enlarge the boundaries of knowledge of nature. Our eye will be sharpened at once for that which connects it with general medicine forever,—*i. e.*, for the interest which general medicine has, on its part, to desire in future the disconnected special culture of individual branches of science and to favor the same.

I consider my task for to-day accomplished, if I should succeed in convincing you that general medicine, that every practising physician, has a great, an ideal interest in this, that dermatology may be cultivated in a manner far more earnestly and extensively than heretofore, by the greatest possible number of workers; that this young daughter of medicine is worthy of such special attention and favor, and will reward the mother for all the trouble spent in its culture.

Dermatology is indeed a young science, not as if for centuries worthy or unworthy laborers had worked in its structure, too large a number of isolated cases, preliminary systems, and names without number testify this. But considered as a science, dermatology has in

the course of the present century, not left the stage of continuous fermentation, of never-ending reconstruction. In vain are dermatologists longing for a place of rest, for quiet development, such as has been accorded to ophthalmology since the labors of such men as Helmholtz, Donders, Gräfe. Every important new fact arising in the field of dermatology is liable to shake the entire structure of the present time, and to remind us of its frailty. And is this science, characterized, in spite of practical success, by theoretical insufficiency and constant changes, to bring to general medicine the promised fruits? I hear the question in astonishment, and yet I must reply: Yes, and how paradoxically it may sound, for this very reason. The causes opposed to the development of dermatology are based upon the same circumstances which in future will become of so much value to general medicine.

In no other branch of medical science are observations made so easily, but also defined with such difficulty, as those presented by the skin. The confusing polyformity of processes manifesting themselves externally is sufficient to explain the slow progress of scientific dermatology. As it is far easier to distinguish the qualities of a fluid when it drips slowly as from a filter, than when flowing *en masse* in an open canal, so the isolated symptoms of a skin disease will readily vanish in the contemplation of the entire field. Investigation of diseases of the kidneys by the examination of the urine, of lung diseases by examination of sputa, of diseases of the digestive tract by examining the evacuations, may be compared to the minute but accurate observation of the water drops in the filter.

Attention is simply directed to variations of symptoms, the knowledge of which is easily obtained, as well as the deductions as to the condition of the internal organs; this does not imply much, yet it is safe. A more thorough knowledge of internal organs we obtain by gradual and successive combination and comparison of large series of single observations, a slower process, but steady and satisfactory, and yet remaining imperfect. What results would, for example, arise from observations made on the kidney in different forms of nephritis, where at present we are reduced to speculative examination of the urine and the results obtained at autopsies! If this were sufficient, many controversies might be decided by simple observation. This hypothesis presupposes, however, that the symptomatology of the organ has already attained the same high degree of perfection as has the examination of the urine; if this had not preceded, if the questions were not already formulated, the surprising manifoldness of the picture would irritate as much as ever-changing symptoms in skin diseases impress most physicians, conveying the very contrary of a clear view.

We now arrive at the conclusion that it would have been better, in the interest of dermatology, if in the study of isolated symptoms, of secretions and excretions, for

example, the entire complex of symptoms had not been exposed. The minor exposition would have been examined by means of the auxiliaries physics and chemistry; many questions would have been suggested and answered speculatively, and the main questions brought to a point, so that by the removal of the veil from all processes, our eye would have been concentrated upon those points where questions of pathology of the skin are involved, and simple observation would decide at once yes or no. Yet this is Utopian. In the diseases of the skin we suffer from an oppressing mass of symptoms and have to contend with them. We have no mechanical filter presenting to us, drop by drop, single facts, we have only a mental one in the eagerly directed attention to a single point, and knowledge penetrating more and more into the finer structures of the skin. We shall overcome, working on step by step, the disturbing influences of the multiform external picture. No organ of the body, except the central nervous organ, which partly represents features of the external skin, exhibits so many topographical differences. One segment of the liver presents, in its external structure the same features as any other one, any section of it presents gall ducts and parenchymatous cells, connective tissue, bloodvessels, and nerves.

Let us examine such a complicated organ as the kidney, or the eye; there we have indeed contrasts of cortex, marrow, papillæ, but they repeat themselves in every segment in the same order. Even the eye, if I may compare it to a mechanism, is, like the kidney, approximately of symmetrical radiary construction. The skin, however, presents, like the central nervous system, only bilateral symmetry, and in each of the symmetrical halves we have large series of regions entirely different in structure: either hairy or hairless, rich or poor in muscle, with thick or thin panniculum, more or less provided with terminal nerve apparatus, such which have both sebaceous and glomeriform glands, and others with glomeriform glands only, with thick or with thin stratum corneum, with perfectly developed papillary layer and without it, with equal or unequal degree of diversibility, with acid or weak alkaline reaction of secretion; the skin of extensor and that of flexor surfaces, free surfaces and others of contact; the *cutis vera* and its appendages. A large series of skin affections is changed through such topographical differences to such a degree that it requires a long study in order to conceive the relationship of such affections.

An old example of this is *porrigo*, *tinea*, *teigne*, known still to-day in France and England as an isolated designation of disease of the hairy scalp, which originally were really used for as many peculiar diseases. As a modern counterpart may be mentioned the three diseases of *impetigo simplex* (Wilson), of *sykosis simplex*, and of *furunculosis*, which, according to Bockhart's researches, are caused by the known white and yellow staphylococci, according as the surface of the skin upon which they occur is covered by lanugo, by thick hair, or as the cocci find a good soil in the glands. The most important example for pathology is, however, that of the different forms of tuberculosis of the skin. We have on the hands and feet the relatively harmless species of *papillomatous lupus*, beginning as an anatomical wart and healing in its centre, progressing very slowly with peripheral papillary excrescences. We have *tuberculous lupus*

and the very different *sclerotic lupus*; the former mostly appearing on the face, trunk, and upper extremities. There is the *tuberculous lymphangitis* of the skin, with the so-called *tuberculous gumma* and *bubonuli*, which lead to *tuberculosis* of neighboring lymphatic glands; further, the entirely flat lupus upon such cheesy glands if destroyed by ulceration; and, finally, at the termination of the *tuberculous drama* in the perfectly exhausted skin, those ominous *tuberculous ulcers* at the introitus of cavities, appearing in the lung and intestines much earlier. As many different forms of disease are presented by the lichen process, according to the degree of participation of the different parts of the skin. The modification by localization in the leg of the different skin diseases is known.

But enough of these examples; they demonstrate that we have to filtrate, as it were, the topographical, macroscopical, and microscopical differences of the normal skin from the manifold picture of a case before us, if we desire to arrive at an exact diagnosis. This is of special importance in those dermatoses which are localized in an unusual manner—e.g., in an extragenital chancre; in a circular spot of lichen or psoriasis of the genitals, of a *sykosis* of the hairy scalp, in pointed *condyloma* of the capillitium. Another variety of skin disease depends on the typical change of symptoms in their course. This cause of polymorphy has produced historically most of the confusions, and continues to be a source of misunderstandings. The great dermatologists of modern times, Plenck and Willan contended with this difficulty without overcoming it. Their systems are attempts to embrace in the clinical forms of exanthems the true pathological types; and they knew, as appears from Bateman's preface to Willan's manual, that this one-sided presentation of the forms of efflorescences, for the object of classification, does not correspond well with the changeable character of most of them. They preferred, however, from practical reasons to give preference to this classification, which was based upon symptoms attracting the senses, and they were right. They did not imagine how much the future would rearrange in detail their order and reclassify it, partly through the discovery of finer anatomical distinctions, which rendered grouping untenable, as in lichen *pilaris*, lichen *urticatus*, lichen *tropicus*, and partly because it recognized remote forms of disease as a single one, as *impetigo sparsa*, and *porrigo larvalis* as *eczema*.

At this sore point of the older system, Hebra, the older, applied his critical lever; his clinical penetration permitted him to discover types of diseases even where entire series of different efflorescences make their appearance in the course of the process. The idea of *eczema* was considerably enlarged by the adoption of apparently heterogeneous forms of disease, to such a degree that the entire period after Hebra, according to the favorite diagnosis of the time, might be called the period of *eczema*, as there was previous to this one a period of *scabies*, and still earlier one of *lepra*. With the same excellent clinical instinct, Hebra limited the idea of lichen and of *impetigo*, and made, on the contrary, these diseases exclusive representatives of a distinct, anatomically definable efflorescent type. He thus overcame intuitively, without being a master of the anatomy and physiology of the skin, many difficulties, which the protean nature of many dermatoses had prepared for

his predecessors, but he has left to us, still, the task of classifying many new and well-known skin diseases.

External influences produce, as is well known, the most numerous variations in skin disease, and in no other organ are they, as a matter of course, of such importance as in the external integument. While formerly these causes of external injurious effects which were considered of greatest importance, were generally regarded as mechanical, rarely as chemical, but at the present day these, although important factors, must give place to living parasites. If we know now with certainty that the normal epidermis in its horny layers is the nidus of an entire series of saprophytes, then it is a necessary consequence, according to what we know of the habit of such organisms, that the morbid epidermis provides a still better abode for ordinary saprophytes and a soil generally more favorable for the aggregation of true parasites, especially when the epidermis is abnormally moistened and contains decayed elements, pus cells, etc.

If mixed infections have a greater share in the production of diseases of internal organs than was heretofore believed, and if many deviations of the type of internal diseases prove to be, by accurate bacteriological investigation, secondary bacteriological invasions, we must assume *a priori* that in the exposed skin a secondary immigration of parasites forms the rule. This is confirmed, in fact, the more we collect experience in this direction. In most infectious diseases—*e. g.*, those invading the external integument, as variola, varicella, morbilli, and scarlatina—we have become acquainted with up to the most recent time such secondary invaders only, not, however, with the bearer of the poison proper. Perhaps we meet in van der Loeff's amoebæ, in Pfeiffer's sporozoides—the genuine parasite of smallpox-like diseases. All cocci found in smallpox only served to explain the puriform, secondary softening of the pox. We shall certainly have the same experience in many skin diseases. There is no doubt that, in acne vulgaris, the formation of comedones on the one hand, and the purulent inflammation of the follicle on the other, represent two processes internally absolutely foreign, externally simply combined, but existing independently of each other.

We observe that an originally purely nervous eczema, whose zoster-like vesicles on a previously healthy skin have suddenly sprung up, as in the dentition eczema upon the cheeks of the infant, after some time, begins to creep on like herpes tonsurans, instead of jumping over to remote parts of the skin in the track of nervous reflexes, as its nature demands. There is, then, no doubt that on the moist basis of nervous eczema, a parasitic—*e. g.*, seborrhæic eczema, has taken its seat, which now assumes the leadership, and dominates in the form of the disease. The joining of carcinoma in lupus is not otherwise to be explained. Even processes which we have been in the habit of considering as normal phases of well known dermatoses, as the suppuration of the zoster vesicles, have to be reduced to secondary infections. If we paint a beginning zoster immediately with iodoform, or some similar drug, the vesicles will develop as usual, but remain clear, the normal suppuration is suspended, and in the contents of the vesicles are found Pfeiffer's amoeba-like organisms. How much more must we expect mixed infection where skin affections do not meet our eye in their typical forms.

In this is the next, most pressing task of the future; bacteriological analysis of skin diseases is, perhaps one of the most difficult of all bacteriological studies, but it is also one of the most interesting, and it does not require the gift of a prophet in order to see it develop from this study the germ of an entirely new conception of skin diseases in general; for clinical causes demand that we assume the parasitic origin of a larger number of dermatoses than many practitioners and colleagues of to-day are willing to admit.

Next to mixed infections are to be considered numerous external injuries, of mechanical, physical, and chemical nature for skin diseases. Let us simply think of the effect of cold and heat, of the variation of eczema in covered and uncovered parts of the body, in places which may be reached by the scratching finger and those remote from it, of the manifold peculiarities produced by the occupation of the patient, which can hardly be calculated in their extent; let us remember the complications produced by tight, rubbing, and compressing garments and ornaments on the affected skin, which may transform harmless eczema into dermatides accompanied by œdema, sugillations and vesicular formations. Let us pass before our minds the immense number of external and internal remedies which, in not desirable effect on the skin, give it an entirely new appearance, from arnica up to coal tar and chrysarobine. These external influences are so great, and admitted to be for so a long time, that the maxim was formed, under such circumstances confusing diagnosis, to permit the skin, under a protecting cover, to reflect the true nature of the affection.

Diametrically opposed to these external influences are the rarer but more difficult effects of internal nature, which must be ascribed to the individuality of each patient. Psoriasis and lupus vulgaris belong to skin disease easily diagnosticated, and yet there are individuals whose skin reacts upon these causes with such peculiar phenomena of irritation that extraordinary difficulties present themselves in diagnosis and treatment. The greater liability to these individual varieties is furnished by diseases under the influence of nervous affections: the simple nervous eczema, dermatitis herpetiformis (Duhring), varieties of herpes, erythema multiforme, and urticaria. Deviations from the ordinary type are observed in these instances, which threaten to displace and erase the character of members of this group, rendering exact diagnosis difficult. Disturbed circulation and cyanotic discoloring of the hands of working people may change existing eczema so considerably in appearance that even experienced physicians err in their diagnosis. The dermatologist has to make it a rule to himself, in rare affections, to examine the general constitution of the skin—above all, the circulation, the function of glands, and the condition of the epidermis—before he proceeds to the study of the morbid skin. And yet the causes of the varieties of skin diseases are not exhausted.

We have not spoken yet of those varieties induced by age and sex, country, climate, seasons, and race. The separate position of some skin diseases in children, compared with corresponding affections in the adult, is familiar to every practitioner. Every American physician knows of the great difficulties presented by the different pigmentation of races in the diagnosis of skin dis-

eases. I fear to fatigue you by entering more intimately into these points, and desire simply to point out in a few words the different *genius endemicus* of dermatoses in different countries, zones, and continents, and to the changing *genius epidemicus* in the same places. Lichen ruber acuminatus, Hebra's prurigo, are diseases almost unknown in America, as well as in England and France, in the place of which we have lichen planus and an eczema related to prurigo. Patients suffering from prurigo, transferred from the European continent to England and America, recover without medical aid more completely than they would at home with the best attention. There appeared in Hamburg, some years ago, a perfect epidemic of lichen ruber acuminatus, and disappeared again. At the present time there prevails there eczema seborrhoicum above all other eczemas, even psoriasis. Sycosis parasitaria slowly advances and diffuses, with herpes tonsurans of children, from England and France into Germany. But a few years ago the former was unknown in Vienna. The effect of tropical climates upon skin affections, especially eruptions caused by excessive sweating, has not been studied sufficiently. We shall probably meet here frequently old acquaintances in foreign dress and new names.

These scanty indications may suffice to prove that the study of the skin has to be an ethnological, climatological, and geographical one. By such comparisons we are, on the one hand, protected from the one-sidedness of some of the schools in different countries, and on the other, we obtain, by the collection of dermatological experience in all countries and zones, an extensive picture of the complete pathological functions of the skin.

In these facts, gentlemen, is embodied the explanation or, if you wish, the excuse that dermatology as a science has not yet attained the same high position of absolute knowledge as ophthalmology, or obstetrics. The complicated structure of the skin and its exposed position, render difficult an analysis of what is observed and will continue to make difficulties in the future.

More deductions may be made from these facts: We are in the first place directed with pressing necessity to minute analysis of the several symptoms of skin diseases, the first condition for a better understanding of skin diseases *per se*. This exact study of a single symptom, *e. g.*, function of perspiration, or of nerves—with all the auxiliary assistance rendered by physics and chemistry, by histology and experimental physiology, through all the regions of the skin, in all ages, in the normal skin of men, and in the greatest possible number of animals, in different morbid processes—that is what we want, and which we have heretofore had to do without almost entirely. Not the description of any new, heretofore unknown, skin disease is at present our most important problem, but the most penetrating understanding of the most common daily affections, like eczema, acne, and psoriasis. Strict analysis of the most usual symptoms must and will finally lead us to a firm basis of facts, accepted by all colleagues, and upon which a uniformly accepted pathology of the skin will arise.

We are then no longer, as in the times of Hebra, reduced to the clinical instinct of a single genius, but hundreds of active workers will successfully cooperate in building the common, solid structure. Then the faith in authorities will cease, and we shall not be compelled to

explain to other professional brethren the mysteries of dermatology, but explain its facts. The divided national camps and schools among dermatologists will disappear, and it will be impossible to designate the same disease in Europe as a fungoid, and in America, or France as a constitutional disease of the blood. Then we shall do away with the rubbish accumulated during centuries, the superstition of the people and of physicians, which in spite of the glorious efforts of the Vienna school, still presses like a night-mare upon the unprejudiced study of skin diseases.

But this strict and minute analysis of all symptoms to the greatest extent will not benefit dermatology only, and this is my second deduction, but pathology in general. These two circumstances, complexity of the organ and its external position, rendering, on the one side observations difficult, make on the other side that which has been observed of importance for the entire pathology. The skin will become the touch-stone for every pathological theory of the future, far more so than the experimental organ in experimental pathology and therapeutics of the future. The eye only contests, in clearness of observation, with experimentation on the skin, which is preferable as regards the animal body in most cases. For experiments in men we are reduced almost exclusively to the skin, and the few bacteriological experiments in this direction by Fehleisen, Garré, Bockhart, and others, have led to perfectly satisfactory, and explicit results. If all the parasites of the skin and their conditions of life were known to us, and we had learned their extraordinarily different pathological effect on the skin, from this limited chapter of experimental pathology and therapeutics a bright light would be shed upon the more obscure analogous processes of disease and treatment of internal organs.

The contest *pro* and *contra* concerning the tropho-neurotic theory of disturbances will naturally be decided through the skin; the safe and broad basis of this theory was created by the eminent work of the American physicians Weir-Mitchell, Moorehouse, and Keen, during the War of the Rebellion. For observations of circulatory phenomena the external integument is indispensable, and especially for the sporadically appearing, and equally rapidly disappearing phenomena, only seen in the skin, like the angioneuroses, *e. g.*, urticaria. It is possible, even probable, that in other organs, *e. g.*, in the central nervous system, and in the mucous membrane analogous disturbances exist, which, as they never appear on the post-mortem table, can only be observed by means of the analogy of similar symptoms of the skin. The true nature of these skin diseases, heretofore treated by experimental research in a superficial manner, has certainly great value for general pathology.

I believe that these deductions are self-evident to such an extent that I need not prolong this connection of ideas. The entire pathology in the main, as the theory of inflammation and of tumors, has proceeded from skin symptoms; and it is still in every new definition of inflammation, the final touchstone, whether it can explain the four old cardinal symptoms: tumor, calor, rubor, dolor, originally applied to inflammation of the skin.

I would like to refer briefly to experimental therapeutics, to this interesting science of the future, the results of which have to supply or to confirm empirical

therapeutics. Numerous experiments on animals are considered to-day as the condition of recommendation of a new remedy supplied by chemistry, and yet we can make very rarely a final conclusion from the toxicological experiment in animals upon the therapeutical effect on man.

Experiment on animals is, however, not the only safe way to attain therapeutical knowledge. History teaches us quite a different road, viz., from the bold external to the careful internal application. The internal application of mercury was dreaded in antiquity. Dioscorides admonishes us expressly against its use. But when, at the end of the fifteenth century, with the appearance of syphilis, the mercurial ointment cure became popular, and by laymen more than by physicians was profusely applied as a remedy, occasional and isolated applications of its internal use occurred. In the beginning of the sixteenth century, pills containing mercury and turpentine, of the pirate Hayreddin, were in favor. At the end of the sixteenth century, with the mercurial ointment cure approved by physicians, internal mercurial preparations were administered. The balsam preparations had certainly already made this passage from external to internal applications, in antiquity. Well, this way is open to us to-day.

In illustration, I will quote an example from my own practice. I was experimenting with a sulphur remedy, which has received the name of ichthyol among laymen, in different skin affections, and found, among others, that in diseases of a distinctly nervous nature—*e. g.*, in certain nervous eczemas—it produced surprisingly good results by external application; I also found, however, that in continued external application this good effect changed to the opposite, and the idea then suggested itself to apply it internally in these affections; here I found its effect constant and satisfactory; it appeared that the domain of application of ichthyol, with respect to skin diseases, agrees partly with that of arsenic, but disagrees for the most part. In further experiment it surprised me as well as the patient, that certain complications of this eczema, especially nervous bronchial asthma, likewise disappeared under the use of ichthyol. Was it not natural when, later, other cases of bronchial asthma, not combined with eczema, were treated in the same manner, and the good results justified this supposition, that I considered ichthyol as one of our best remedies in bronchial asthma in general, and place it at the side of iodide of potassium. In a similar manner I have, proceeding from the skin, found the good qualities of this remedy—known to physicians—in chronic catarrhs of the stomach and intestines, and in chlorosis.

There is, therefore, an innocent, safe way for therapeutical experiments, which are not performed on the body of an animal, but the human skin, and as this tissue is, under proper treatment, very tolerant, I anticipate a large series of therapeutical acquisitions gained in this way. I expect not less beneficial effects from progressive dermatology or the future of surgery. Our specialty is properly situated between internal medicine and surgery, and bridges the wide chasm of both; sharing with internal medicine the gain of therapeutical effect, with surgery more the benefit of immediate diagnosis.

If we dermatologists have learned in general from

modern surgery the blessings of the antiseptic method, in a limited sense, and the significance of the passive method, excluding all injuries, the time will come when surgery will long for a more active interference in surgical therapeutics, and then it will have to befriend itself with the results obtained by modern dermatology, which constantly studies the direct effects of chemical and physical agencies upon the tissues. The iodoform dispute of recent times has demonstrated that some surgeons still regard as identical the theories of antiseptic remedies, in the stricter sense, and surgical remedies in general, while according to our opinion antiseptics form only one part, an important one indeed, of surgical remedies. Iodoform has been saved this time, but even if all surgeons had turned away from it from fear, because iodoform does not destroy cultures of *Staphylococcus aureus*, we dermatologists would have continued to disinfect our soft ulcers with it and to esteem it highly, until a proper appreciation of the blessings of iodoform and the unimpeachable reasons for its being held in high estimation had been found by surgeons.

Permit me also here to give an example from my personal practice. We dermatologists, as well as physicians and surgeons, have to contend with one form of tuberculosis; viz., lupus. It may be a valuable direction to surgeons, that among all other local anti-tuberculous remedies, above iodoform, pyrogallol, ichthyol, lunar caustic, salicylic acid has been approved, in pure form, as plaster-mull, or as a high per-cented salve, but especially the less painful mixture of salicylic acid and creasote. In tuberculosis of lymph vessels and lymph glands salicylic acid is equally excellent; whether it be for that of bones, further surgical experience must teach us.

I hope, gentlemen, that continuing this train of ideas, you will agree with me that the promotion of dermatology, as a special science, is in the interest of general medicine, in the interest of the naturalist, as well as in that of the practical physician. Such a promotion I see already in the increase of young practical physicians, who devote themselves with ideal enthusiasm to this branch, and happily there is no want of them at present. But essential encouragement ought to proceed from the Government and Universities. In France and England the entire burden of scientific research in this branch rests upon the shoulders of physicians and surgeons, who, simply from love for this branch, have devoted themselves to its special promotion. By special institutions this want is provided for in increasing extent in Russia, Germany, Italy, and the United States. Nowhere are so many chairs occupied by eminent savans in our branch as here in the United States, and yet the means for real progress in our specialty are not sufficient. The objects are so manifold, too confusing, too difficult for one individual, the extent of preliminary sciences to be acquired too extensive. Quite different results would be attained here by an association of investigators pursuing the same object, by a condensation of scientific means and methods, as they can be found only at a scientific central institution.

North America has, as no other country, produced citizens who have rendered themselves meritorious by founding rich scientific institutions. The first and oldest university of this country was founded, indeed, by a single man. A single American citizen will honor himself and

his country by the foundation of an institution, which elevates dermatology to the rank of one of the first medical branches, and, through it, places in view rich advances in general medicine.

ORIGINAL ARTICLES.

ON THE VACCINE OF YELLOW FEVER.¹

BY DR. DOMINGOS FREIRE,
PROFESSOR OF ORGANIC AND BIOLOGICAL CHEMISTRY IN
THE MEDICAL FACULTY OF RIO JANEIRO.

In 1880, I announced that yellow fever was due to the presence of an extremely minute organism, found in the blood and deeper tissues, and also in the liquids of the secretions, which caused, by its evolution, disorders often fatal. Since that time I have continued my investigations with the view of proving the transmissibility of the microbe, and also that I might transform it into a vaccine by attenuation.

I have published papers on these different subjects and, also, a report entitled, "Doctrines microbiennes de la Fièvre jaune et les Inoculations Préventives," in which I have condensed all my ideas as to the pathogeny and prophylaxis of yellow fever. Two of these papers were made with the collaboration of Messieurs Paul Gibier and Ch. Rebourgeon, both distinguished pupils of the eminent scientist Pasteur, who were good enough to associate themselves with me during the present year while I was in Paris. Recently, at Rio Janeiro, I have continued the same investigations with Dr. Sternberg, who was sent by the United States Government to learn the result of my work. I now only fulfil a duty in expressing my gratitude for the interest and unflagging zeal shown by this learned physician, as well as for the efficient aid which he has given me.

The theory which I advanced as to the nature and prophylaxis of yellow fever, is the first of a long series of experiments assiduously pursued for a period of seven years. I hope that this will justify my assured confidence in the facts which I have observed, not only with reference to the etiology and pathogeny of the disease, but also with regard to the practice of preventive inoculations proposed by me.

My present communication I will divide into several parts, so as methodically to embrace the somewhat miscellaneous remarks which I have to offer.

II. *Natural history of the amarillus microbe. Its classification, evolution, and cultivation.* I have rejected the kingdom of the protista in attempting to classify this microbe, preferring to place it among the algæ, on the authority of scientists like Robin and Littré, Germain, St. Pierre, and others.

In 1880, when I discovered the amarillus microbe, I named it the *cryptococcus xanthogenicus*, because it seemed to me to have the general properties which characterize the genus *cryptococcus*. Recently the

genus *micrococcus* has been created to designate the cellular or ovoid microbes, which are the cause of many infectious and contagious diseases. Many botanists, as I am informed by Dr. Pizarro, the distinguished professor of botany and zoölogy in the faculty of medicine of Rio Janeiro, consider this genus *micrococcus* the same as *cryptococcus*, the difference consisting merely in the method of reproduction, in the latter it being by spores, while the *micrococci* reproduce by budding.

The *amarillus* microbe is found in a monocellular form, commencing as a round point, almost imperceptible even with a magnifying power of 700 diameters, the points increasing little by little, strongly refracting the light and soon showing dark zones when the light is reflected on them at certain angles. These little cells are circular (spherical), surrounded by a grayish or black border, and contain in their interior masses of protoplasm. Reproduction, as I have many times seen, is effected, as it seems to me, by the rupture of the enveloping membrane.

The laceration of each cell may occur at a single point simulating a budding, but almost always the enveloping membrane breaks irregularly at several points. On the flaps resulting from the laceration there are seen colored viscous masses to which the germ cells adhere.¹

These masses attaching themselves to the débris of the destroyed cells are often arranged in an almost symmetrical manner, sometimes in the form of a pear, of a pine cone, or of a pineapple, sometimes like long and more or less flexuous chaplets. The microorganisms measure from one to one and a half micro-millimetres.

At the time of proliferation there escape from each adult cell two different pigments, one yellow, which infiltrates all the tissues and produces the icteric color which gives the disease its name; the other black, insoluble, destined to be carried into the circulatory current and to produce either capillary obstructions, or blood stasis in the parenchyma of organs. The anuria is occasioned, at least in great measure, as the microscope shows, by the accumulation of microbes and their débris within the urinary canaliculi, exciting there, by their presence, colloid degeneration which transforms each uriniferous tube into a solid cord and thus prevents the renal infiltration.

The black color of the vomited matters is due to this pigment. This seemed strange at first, but since the publication of my earliest investigations it has been found that there exists in nature a great number of microbes which have been called *chromogenic*, and have the property of manufacturing pigments of different sorts, the coloring being sometimes very striking. In support of this I will cite the dark blue pigment made by the *bacillus cyanogenus*, another beautiful reddish-purple color given by the *micrococcus prodigiosus* and the *micrococcus indicus*. Besides, the presence of these pigments has been confirmed by many physicians, among whom I will

¹ An abstract of a paper read in the Section of Public and International Hygiene of the International Medical Congress, Washington, September 7, 1887.

¹ I call these germ-cells spores. Even admitting that the micrococci can only reproduce by budding, each bud forming a nascent cell can, strictly speaking, be only a spore.

cite Drs. Rebourgeon, Issartier, and Prof. Artigas, of Bordeaux.

Prof. Cornil, in his *Traité sur les Bactéries*, has reproached me for having shown, in the illustrations of my book, *Doctrines microbiennes de la fièvre jaune*, masses of pigment, "for," says he, "these pigments are accidental corpuscles, and not bacteria." I know very well that these are accidental corpuscles, but it should not be forgotten that such corpuscles are correlated with the life of the amarillus microbe. Convinced that the observer has no right to correct nature, and repress what she clearly shows, I thought it my duty to place in my illustrations the pigments met with in cultures, especially as these same pigments play a very important part in the pathogeny of the disease, the two phenomena, icterus and black vomit, being the symptomatic expression of their presence in the organism of the patient.

Prof. Cornil himself has not been indifferent to the great interest which many attach to these pigmentary matters, for he mentions them several times in his treatise already cited, and has therefore repeatedly verified the pigments which I showed in my illustrations. I am happy to say that he has also confirmed the presence of the amarillus microbe in organs sent from Brazil. When I was in Paris about four months ago, I had the pleasure of receiving a visit from that illustrious scientist in the Laboratory of Comparative Pathology of the Museum of Natural History, where I was carrying out my investigations together with Drs. Gibier and Rebourgeon. We had an opportunity of showing him liquid and solid cultures made after the methods of Pasteur and Koch, and were able to satisfy him that coloration was invariably associated with microbes which, in his treatise, he reproached me with not having shown. On this occasion he was able to compare the microbe in the fresh condition, which he had not before seen, and the dead microbe stained with the hydrochlorate of rosaniline.

I have made perfectly successful cultures of the xanthogenic microbe in beef broth, milk, and gelatine solutions. I prefer gelatine solutions made, not with distilled water, but with ordinary water, because the latter contains different mineral salts and even some organic matter useful to the microbe. All the details with reference to my method of carrying on cultures are given in the first part (Chapter III.) of my report on the *Microbian Doctrine of Yellow Fever and Preventive Inoculations*, published in Rio Janeiro in 1885.

Besides Pasteur's method of cultivating microbes, I also used, with my microbe, Koch's method of solid cultures. Experiment has showed me that the amarillus microbe is easily stained, much more easily than many others, by aniline colors, such as the hydrochlorate of rosaniline, methyl-violet, and Bismarck-brown. In a brief paper presented a short time ago to the Académie des Sciences, we pointed this out, and Drs. Gibier and Rebourgeon showed colonies of the xanthogenic microbe stained a violet color and perfectly visible by means of a Verick microscope, eye-piece No. 3 objective, with homogeneous immersion.

We have, besides, succeeded in cultivating the

same microorganism by means of the method of Koch. Placed in tubes containing gelatine which has been previously perforated by a sterilized platinum wire and charged with a little drop of culture fluid, the microorganism, kept at a temperature of from fifteen to twenty-five degrees, forms colonies which take the form of a nail, the head being on the surface and the point buried below in the gelatine. The gelatine liquefies little by little in an irregular manner, and the liquefaction always takes place at the superficial strata, which indicates that the microbe is aerobic.

The amarillus microbe has the property of elaborating products belonging to the class of ptomaines (leucomaines of Gautier) at the expense of the albuminoid and other matters on which it feeds. These ptomaines are very poisonous. I have made numerous experiments with them on dogs and frogs, experiments which show that these alkaloids have a remarkable influence on the sympathetic and pneumogastric nerves. Many symptoms of yellow fever will thus be plausibly explained by the profound disorders which these poisons occasion in the cardiac apparatus and the vasomotor nerves. In the cultures themselves these ptomaines are formed. Gelatine having a neutral reaction becomes markedly alkaline after the microbe has been in it a few days, and by well-known methods we can extract from these cultures, ptomaines similar to those found within the body in cases of yellow fever.

II. *Inoculability of the amarillus microbe. Its attenuation.* I have made a great number of inoculation experiments upon animals in order to prove the transmissibility of the disease. I have remarked that not only do inoculations made directly with blood and with virulent cultures kill rabbits and guinea-pigs in from two to ten days, but that the same result occurs when these animals are kept in an atmosphere more or less saturated with microbes. Many animals died simply from breathing the air of the laboratory where I made my experiments and autopsies. Their organs showed many specific microbes. I have placed the inoculability of the microbe beyond doubt by injections, both hypodermatic, intravenous, and intravisceral. I have made many series of experiments which I am happy to announce have recently been fully confirmed by Dr. Rangé, physician of the first-class in the French Navy at the Salut Islands, French Guinea. The account of these experiments was published in the *Archives de Médecine Navale*, last year.

The transmission of yellow fever from individual to individual by blood which was in the first place virulent, and which loses none of its virulence by passing through different organisms, shows clearly that the agent which produces the disease is not dead matter, but living, and susceptible of reproduction by successive transmissions. This agent can be nothing else than the only abnormal element of definite form constantly and invariably associated with undoubted yellow fever cases, that is to say, the micrococcus xanthogenicus. These direct proofs having put beyond question the parasitic and contagious nature of yellow fever, I applied myself to the study of the attenuation of the microbe so as to

change it into a product which might be used for vaccination.

We know that yellow fever, except in very rare cases, attacks the same individual but once, a characteristic found in almost all transmissible diseases of a virulent nature. If we succeed, however, in attenuating the cultures of the xanthogenic microbes so that they produce only such slight disturbances and changes of composition in the blood and in the tissues as will confer immunity, we shall then obtain for yellow fever the same great desideratum which we have already obtained for smallpox, for chicken cholera, and for splenic fever in those animals which are susceptible to it.

Now I remarked that after a certain number of successive cultures the microbe became much less virulent, and guinea-pigs inoculated with it did not die, resisting an injection of from 50 to 100 cubic centimetres of attenuated culture fluid. They had slight fever, loss of flesh, and some other symptoms, which disappeared in a few days; besides, in a great number of the animals thus vaccinated, having made a few days later an injection of virulent blood, I proved that none of them died, although the same injection killed all those not inoculated with attenuated cultures.

The vaccine is prepared as follows: The blood of a patient, dead or about to die of yellow fever, is injected into the veins of a guinea-pig or a rabbit. A second animal of the same species is then inoculated with the blood of the first, and so on for six or seven animals. With the blood of the last cultures are made, which are transplanted at least four times; then I commence inoculations upon man, not, however, without having first ascertained, by experiments on animals, that the inoculations will not produce grave results. We thus obtain a tenth or twelfth generation from the primitive microbe, the virulence being notably diminished. The attenuation is caused by the new conditions with which the microbe is surrounded in passing through the organism of the guinea-pig, and its after-cultivation in sterilized test-tubes containing beef broth or gelatine.

Besides this, cultures attenuate of themselves gradually under the influence of air, so that a liquid at first virulent may be inoculated without danger in from seven to ten days afterward. These cultures once attenuated preserve their attenuation indefinitely until epidemic seasons, during which their activity almost insensibly increases. I, therefore, undertook experiments to ascertain how to renew the virulence of the cultures, and I can now, at any time of year whether during the epidemic period or not, keep up the virulence of these cultures, and change them at will from a toxic to an attenuated condition, and *vice versa*, obtaining gradually the energy proper for vaccination and increasing it up to that which is infallibly fatal. I proceeded as follows in obtaining this important desideratum.

1. I practised inoculation by the hypodermatic method, injecting under the wing of pigeons or chickens 15 minims of attenuated culture fluid, used for the inoculation of patients.

2. Three hours afterward I killed the birds, in the blood of which the culture had been in a state of

incubation or digestion, collecting the blood in sterilized flasks, conducting the operation with all the technical precautions necessary to prevent the introduction of foreign germs.

3. Immediately after, I inoculated small birds with this blood, allowing 5 minims to $7\frac{1}{2}$ drachms weight of the animal.

All those used in this experiment died within seven days.

The experiment repeated fifteen times on *tiés* and *sanhassies*¹ gave identical results.

4. At the autopsy I found in the bodies of the birds lesions similar to those of yellow fever, and among the appearances I would cite as of high diagnostic importance, matter black as writing ink in the gizzard and intestines. The blood of these birds examined microscopically shows the microbes characteristic of the disease.

5. The blood of the chickens and pigeons killed as stated in paragraph 2, preserved its deadly virulence for sixteen days, after which attenuation commenced.

6. Guinea-pigs inoculated with the same blood (the inoculation being intrahepatic, into the peritoneum or simply subcutaneous), even in a proportion of eight minims per one and one-quarter pounds weight of animal was also toxic, killing in from two to ten days. The anatomical lesions confirmed the diagnosis of yellow fever. The fluid of the stomach was very turbid and black, and the urine contained albumen.

7. If the blood from pigeons or chickens No. 1 is injected into one of the same species No. 2, 3, 4, or 5, the energy of the virus progressively decreases according to the number of transplantations made from one animal to another. We may thus always procure a series of cultures systematically graduated. When animals, either birds or guinea-pigs, are inoculated with attenuated cultures they obtain the immunity of vaccination and are no longer affected by fatal virus.

8. The specific microbe having its ordinary appearance is found in every case in cultures thus graduated.

9. Confining myself for the present to the statement of these facts, I will not now attempt to explain why the microbes remain unaffected in strength for some hours within an animal organism itself insusceptible to yellow fever, this agreeing with the observations described in my last work, and recently repeated, with an identical result by Dr. Rangé, of the French Navy.

The fact that an organism may not itself be affected by a morbid element, and may yet increase the virulence of that element, extraordinary as it may seem, may explain a great number of questions relative to the peculiarities of contagion during epidemics, as it may also explain many obscure circumstances relating to the hereditary transmission of various disorders.

III. *Vaccinations upon man; practical results.* Only after the long experiments already described upon

¹ Names given to birds of the genus *Tanagra* which feed upon oranges, bananas, and other fruits.

the virulent power of the microbe of yellow fever, was I encouraged to inoculate the human organism with it. The first 400 vaccinations were made endermically, but I came to prefer the hypodermatic method as being much more sure and easier in practice.

The following is the method of procedure: The culture fluid is taken from the flask with every precaution against foreign germs, and preserved in small tubes containing from one to two drachms, these being sterilized by heat and stopped by emery. A few drops of the liquid are turned into a clean capsule, taken up by a Pravaz syringe, and then there is thrown under the skin, a quantity varying from two to fifteen minims, according to the age of the individual. The disturbances which result from the vaccination are like the prodromes of yellow fever. They are manifested by intraorbital headache, rigors, general lassitude, with heaviness of the limbs, backache, febrile action (99.5° , 100.5° , 102.5° F.), slight epigastric pain, and sometimes nausea, or even vomiting, all lasting not longer than two or three days without the use of remedies. There is no local cause for these phenomena, for there only appears around the puncture a slight reddish areola which quickly disappears.

I shall give a résumé of the results hitherto obtained from these vaccinations. The vaccinations have been performed gratuitously, and were authorized by Ministerial Decree No. 4546, of the Brazilian Government, Nov. 9, 1883.

During the epidemic of yellow fever which took place at Rio Janeiro in 1883 and 1884, I vaccinated 418 persons, not only before the epidemic but while it was raging with its greatest intensity. The number of unvaccinated persons who died of yellow fever was 650. Among the vaccinated persons there were seven who also appeared on the list as having died from the disease. Although there are serious doubts as to whether the diagnosis was correct, I will follow the counsel of my distinguished colleague, Dr. Trouessart, and not seek to suppress these rare cases of failure, especially in view of the imposing number (411) of successful vaccinations which I can put to my credit. This is an extremely favorable proportion, especially when we reflect that the patients in question belong to the working classes, and lived in *estalagens*, damp, narrow, and badly ventilated chambers in the most unhealthy quarter of the city, where the mortality among the unvaccinated, especially among foreign workmen, was great.

Among the 650 unvaccinated persons who died of yellow fever (October, 1883, to June, 1884) 577 were strangers, only 73 Brazilians. Now I vaccinated 307 strangers, the Brazilians who fill up the list of 418 all came from the interior and were therefore under the same conditions of susceptibility as strangers, the yellow fever being unknown in the interior of Brazil, and flourishing only on the sea coast. Not one of the Brazilians vaccinated died of yellow fever.

The results obtained the next year (January to August, 1885) by means of inoculations made, not by the lancet but by the hypodermatic method, were still more favorable. During this interval the num-

ber of deaths from fellow fever from among the unvaccinated at Rio Janeiro was 278, 200 strangers and 78 Brazilians, 44 only being born in that city. During this same period I vaccinated 3051 persons; 2186 natives, and 865 strangers. Among the 2186 natives, 625 were young children of foreign parentage, consequently as susceptible as strangers themselves. During the entire epidemic not one died. The immunity was absolute.

These figures speak for themselves, I think, but this is not all, for during the last epidemic which broke out at Rio Janeiro in 1886, the statistical results confirm their eloquence.

In fact, during this period we vaccinated 3473 persons: Brazilians, 2763; strangers, 710. Of the Brazilians, 489 were of foreign parentage, all quite young, and should really be added to the 710 strangers, as presenting the same degree of susceptibility as the latter. More than this; 222 came from different provinces of the interior and the south, and were therefore in a very favorable condition for contracting the disease. There were really 1421 vaccinated persons who should be added to those who cannot be said to be exempt from contagion by reason of residence. There remained 2053 Brazilian subjects, age varying from a few months to sixty years. In this group a large number, by reason of age or residence in quarters most subject to the scourge, were under the most favorable conditions for becoming victims. Among those vaccinated there were but eight who died of yellow fever, one of whom had been inoculated in 1885, although during the same period the mortality from the disease among non-vaccinated persons was 1389, thus divided: strangers, 1079; Brazilians, 310.

If we recapitulate the vaccinations by the hypodermatic method during 1885 and 1886, we obtain the following result:

First vaccinations in 1886	3473
Deaths of vaccinated persons	7
Second vaccinations in 1885	3051
Deaths of vaccinated persons	1
Total vaccinations	6524
Total deaths of vaccinated persons	8
Mortality of vaccinated persons	1 per cent.
Mortality in yellow fever cases of non-vaccinated persons according to official reports for the years 1885 and 1886	1667

Let us now arrange this so as to include the statistics of 1884, when we employed the endermic method; we have:

Vaccinated	6942
Deaths of vaccinated persons	15

Which gives us hardly two per cent of mortality of vaccinated persons.

Deaths of the non-vaccinated	2317
--	------

I here give but a short abridgment, the entire statistical details are given in a paper presented to the Academy of Sciences at Paris. Still, I think it is sufficient to show the real benefits which may result from a general use of the prophylactic method.

For all the statistical details the reader is referred to the following works:

1st. "Rapport sur les inoculations préventives de la fièvre jaune durant l'épidémie qui a régné en

1883 et 1884, à Rio Janeiro, présenté au Ministre de l'Intérieur au Brésil." This report is annexed to my work entitled "Doctrine microbienne de la fièvre jaune."

2d. "Le vaccin de la fièvre jaune. Resultats statistiques des inoculations preventives pratiquées avec la culture du microbe atténué, de Janvier à Août de 1885."

3d. "Statistique des vaccinations pratiquées avec la culture atténuée du microbe de la fièvre jaune de Septembre, 1885, à Septembre, 1886."

I also recommend the report made by Drs. Rebourgeon, Gibier, and myself to the Académie des Sciences de Paris, entitled "Résultats obtenus par l'inoculation préventive du virus atténué de la fièvre jaune." This paper was presented and read before the Academy of Sciences by the lamented Prof. Vulpian, who introduced it with some remarks very flattering to us, thus contributing to the success of our investigations.

MEDICAL PROGRESS.

TYPHOID FEVER CONTAGION IN THE ATMOSPHERE.—DEVALZ, of Eaux-Bonnes, France, recently reported to the Medical Society of the Hospitals a case of typhoid contagion in a hotel, where a guest brought the fever with him, and where three daughters of the proprietor were attacked. Bacteriological examination of the water was negative. The exhalations from the stools, which were not disinfected, are supposed to have been the medium of contagion.—*L'Union Médicale*, July 26, 1887.

SOLANINE.—GAINARD concludes an extensive investigation of the properties of this drug as follows:

Solanine is a glucoside which does not combine with acids to form salts. Acids decompose it into solanidine and glucose. It is insoluble in water; little soluble in alcohol, ether, and the oils. It is sparingly soluble in strongly acidulated water. It cannot be used hypodermically; its acid solutions are too caustic. It is also caustic when held in suspension. It may be given in pills of $1\frac{1}{2}$ or 3 grains. Daily dosage of $4\frac{1}{2}$ grains to 6 grains is well borne. Its high price, unequal action, and large doses needed to produce an effect make it an undesirable and not to be recommended analgesic.—*Bulletin Générale de Thérapeutique*, July 15, 1887.

CASTOR OIL EMULSIFIED WITH CASEINE.—GASSICOURT has found the following a convenient combination:

R.—Ol. ricini 15 parts.
Aq. lauro-cerasi 5 "
Aq. destillat. 100 "

Casein saccharat. q. s. to form an emulsion.—*Le Progrès Médical*, July 16, 1887.

FRACTURE OF THE HARD PALATE.—DR. E. HARRISON GRIFFIN, of New York, reports (*Medical Record*, July 21, 1887) a case, from injury by falling on an instrument in the mouth of a child thirty-two months of age. A portion of the hard palate was severed and hung down upon the tongue. The parts were readjusted and

retained in place for two weeks by an obturator perforated for drainage, at the end of which time union was so complete that all marks of the injury had become effaced.

PRENATAL TUBERCULOSIS.—The *Centralblatt für klinische Medizin* of July 16, 1887, quotes the conclusions reached by FIRKET, who has written at length on the subject, as follows:

Infection through tuberculous semen the author considers doubtful, although Javi has found bacilli in the seminal ducts which had not, however, produced any changes in the epithelia of the prostate. Bacilli attacking the ovum would injure its development and produce monstrosities, which has not been observed. Bacteria, however, have been found in the placental circulation, which is only accessible through the maternal blood. Cases of general infection in which, besides the lungs, organs not in communication with the external world are implicated, are cited. In about half of the cases of pulmonary tubercle, however, local infection from without only exists. Tubercle has been found in the placenta, although doubted by some. Two cases of tuberculosis of the liver have been found in infants, and one case in young animals; which is explained by the important part which the foetal liver plays in foetal circulation.

Constitutional infection may remain long latent, and then attack the lungs.

HYDRASTIS CANADENSIS IN PILL FORM.—*Les Nouveaux Remèdes* for July 24, 1887, gives the following useful prescription:

R.—Extract. hydrastis canadensis . . . 31½
Ext. ergot. gr. 45
Ferri redact. gr. 45

Div. in pil. 120 in nunc.—Sig.

From two to five pills every three or four hours.

THE DIAGNOSIS OF NEOPLASMS BY EXAMINATION OF THE BLOOD.—HAYEM is quoted by the *Centralblatt für die Medicinischen Wissenschaften* of July 23, 1887, as follows:

Taking as normal 6000 white blood corpuscles in 1 cubic millimetre of blood, the variations were as follows:

Mammary scirrhus, 13 cases, 7400 to 21,700; in 10 cases, over 10,000; in a 14th case, in an aged patient, the number was greatly reduced.

Medullary sarcoma of the breast, 3 cases, all above 10,000.

Scirrhus of the pancreas, 2 cases, 9400 and 9900.

Medullary sarcoma of the testis, 12,250.

Osteosarcoma, 7 cases, 19,500; one case of very rapid growth, 52,700.

Lymphosarcoma, from 11 to 20,000.

Epithelioma, an average of 7800.

Gastric cancer, in 7 cases, an average of 7600; in 5 cases, 17,600.

The influence of operations was shown to be—

Mammary scirrhus, 3 cases; before operation, 21,700, 11,500, 11,000; after recovery, 6200, 6200, 8400.

Medullary sarcoma of the breast, before operation, 10,000; after operation, 9000.

Lymphosarcomata and osteosarcomata showed a still greater diminution after operation.

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SATURDAY, SEPTEMBER 17, 1887.

CATHETERIZATION OF THE URETERS.

AMONGST rare procedures for diagnostic and curative purposes may be mentioned catheterization of the ureters in the female. This operation has been developed chiefly by DR. KARL PAWLİK, of Vienna, and the publication of his method and results marks quite an epoch in the history of renal surgery.

One of the greatest obstacles to the performance of operations upon the kidneys is the great uncertainty as to the condition of the opposite organ, and some of the most lamentable results after nephrectomy have been due to the existence of unsuspected or undetermined lesions of the remaining kidney. The development of the operation of sounding the ureters has progressed to such an extent that, in the female at least, it is now possible to determine the exact condition of both kidneys in many instances. In the male, as yet, nothing has been done in this direction, as it is scarcely possible to reach the orifices of the ureters except by the performance of a perineal section, which has not been practised for this purpose, so far as we know.

Pawlik relates, in the *Wiener med. Presse*, the histories of ten cases in which he has sounded the ureters, and the value of the procedure is clearly shown. In the first case the catheterization resulted not only in the elucidation of the cause of the severe kidney colic, but a cure was effected at the same time. In this case it was found that mucus had been rolled up into a ball, which obstructed the ureter, and developed severe pain. The necessary dilatation was effected, and the condition relieved. In the second case the patient had previously submitted to double ovariectomy at the hands of Prof. Billroth, from which she recovered; but subsequently a dis-

charge of urine occurred from the abdominal wall, and a uretero-abdominal fistula resulted. It was sought by sounding to ascertain the exact condition of the ureters, and it was discovered that one ureter was impervious, owing to parametric exudation. An attempt to dilate the ureter failed, and caused a renewal of the inflammation, for which reason it had to be discontinued. The opposite kidney was proved to be healthy, hence nephrectomy was performed for the cure of the urinary fistula. In the third case, one of wandering kidney, the exploration of the ureters proved that the opposite kidney was not sound, hence a contemplated extirpation was desisted from. In the fourth case, in which was a renal tumor, the soundness of the opposite kidney was demonstrated, and the diagnosis confirmed.

In the fifth case the diagnosis wavered between a tumor in a floating kidney, and an ovarian tumor with a long pedicle. The history spoke in favor of the first supposition, but the catheterization decided for the latter. In the sixth case the exploration confirmed the probable diagnosis of hydronephrosis, and at the same time the hydronephrotic fluid was evacuated, its further development hindered, and the normal function, of the not essentially diseased kidney restored. In the seventh case there was hæmaturia, the source of which was doubtful, and the sounding not only proved its renal origin, but, what was more remarkable, arrested the bleeding, which had lasted two months. This returned later, lasted three weeks, and again ceased after a repetition of the sounding. In the eighth and ninth cases the supposition of a renal tumor was proven to be correct, and the healthy condition of the opposite organ ascertained. Nephrectomy was accordingly performed in each case. In the tenth case an attempt was made to evacuate a hydronephrosis with the catheter, but it did not succeed, notwithstanding that the catheter clearly reached the renal pelvis, as the presence of hydronephrotic elements in the urine, after the exploration, showed. A renal fistula was then formed by the lumbar incision.

These results serve to draw attention to this procedure, as an addition to our methods for diagnostic purposes chiefly, but also, in some cases, as a therapeutic agent of marked value. There are probably other purposes which may be subserved by this operation, such as the dislodgement of an impacted calculus in the ureter.

Dr. Pawlik directs that the bladder should be filled with about 200 cubic centimetres (about 7 ounces) of fluid previous to undertaking any exploration of the ureters. When the bladder is filled to this extent, the orifices of the ureters are situated upon a prominent swelling which runs in a convex bow, from the basal angles of the trigonum toward the urethra. When the bladder is

further distended, this swelling disappears. Generally an arrangement of furrows is found upon the anterior wall of the vagina, which forms an angle, the apex of which is placed behind the urethral prominence, whilst its arms are separated from each other by the vaginal portion of the uterus. The orifices of the ureters are placed within this angle. The point at which the posterior bladder wall turns toward the uterus may frequently be recognized on the anterior vaginal wall, as a transverse line in front of the vaginal portion of the uterus. It forms with the above-mentioned angle a triangle which corresponds to the trigonum, and to a small portion of the posterior wall of the bladder when the latter is distended.

The most important guide for sounding is the prominent swelling of the ureter. The patient should be in the lithotomy position, whilst the perineum is retracted with a speculum, which exposes the anterior wall of the vagina, to view. The catheter is introduced into the bladder, and can be guided by lightly raising up the vaginal wall. Proceeding toward the corresponding ureteral orifice, if no obstruction is encountered, the catheter has been carried too near the middle line. When the opening of the ureter is reached, it is known by the fact that all resistance ceases, and a slight depression is formed in a circumscribed space on the front vaginal wall, the sinking of the handle of the catheter is hindered, and the instrument can be pushed further and further to the side. The catheter can be introduced as far as the pelvis of the kidney, if the ureter is not too tightly attached to the pelvis, or if the pathological changes in the cellular tissue have not fixed the ureter in the pelvis.

We have presented this notice of Dr. Pawlik's observations because they have an undoubted practical application. It may be that the knowledge to be obtained by the catheterization of the ureters will be but seldom required, but when serious surgical operations upon the kidneys are contemplated, information of the greatest importance may be gained in this manner, which could be obtained in no other way.

USEFUL MICROORGANISMS IN THE ALIMENTARY CANAL.

IN *L'Union Médicale* of August 23, 1887, are the records of some interesting results, obtained by PASTEUR, as to the influence of the microorganisms found in the alimentary tract of healthy persons, on the digestion of some of the common food stuffs. They throw much needed light upon this subject, and while these new views are still *sub judice*, they are worthy of the attentive consideration of both the physiologist and the general practitioner.

Pasteur, having first isolated no less than seventeen

microorganisms of the mouth, including the micrococcus Pasteuri of Sternberg, and the coccus designated by the title *k*, of Pasteur, proceeded to add a given number of these microbes to various matters commonly taken as food, and the results are here expressed in the brief terms of the author. The addition of seven of these microorganisms to albumen dissolved that substance completely, while five caused it to swell and rendered it transparent. Ten of them added to fibrin dissolved it, while four rendered it transparent and swollen, nine dissolved gluten, seven coagulated milk, and six dissolved caseine. Three transformed starch into sugar and nine changed lactose into lactic acid; seven changed crystalline sugar; seven produced fermentation of glucose and transformed it partially into alcohol. These organisms also were found to possess the power of resisting the gastric juice for as long as twenty-four hours at the temperature of the body. In the fecal matters he recovered six of these microorganisms of the mouth, the bacillus mesentericus fuscus, the bacillus Coli commune, the bacillus *b*, *c*, and *e*, and the coccus *k*, and four other microorganisms. One of these last dissolved albumen, two rendered fibrin transparent, three dissolved gluten, one transformed potato starch, three transformed lactose to lactic acid, while two coagulated milk, and so on, with many of the various substances generally taken by man.

M. Pasteur, therefore, concludes that the microorganisms found in the normal human alimentary tract are important factors in aiding the carrying on of digestion. While it has generally been supposed that these microorganisms must have some functions to perform in the intestinal canal, so far as we are aware, these experiments are the first to place the supposition on anything like a firm basis, and the repute of the investigator gives assurance as to the accuracy of the deductions he has drawn.

Further experimentation may, and very likely will, give us still further data concerning this important matter, and the world, both professional and otherwise, may soon learn that the word microbe and microorganism is not always synonymous with some morbid process.

AN EMERGENCY SERVICE DURING THE CENTENNIAL CELEBRATION.

THE medical profession of Philadelphia will provide an emergency service modelled after the Geneva Red Cross Commission, which will have stations along the route of parade where the physicians on duty will be provided with ambulances and needed appliances for first aid to injured. When it is remembered that at the recent Jubilee of the Queen in London about 600 casualties occurred, the need for such precaution is apparent.

DR. ALONZO CLARK, one of the oldest and most eminent physicians of New York City, died at his residence in that city, on Tuesday, in the eighty-first year of his age. He had been in feeble health for some years past.

Dr. Clark graduated from Williams College in 1828, and received his degree of M.D. from the College of Physicians and Surgeons of New York in 1835. In 1848 he was elected to the Chair of Physiology and Pathology in his Alma Mater, and in 1853 he was transferred to the Chair of Practice of Medicine. He was for a long time Visiting Physician to Bellevue Hospital, President of the Medical Board at St. Luke's, and Consulting Physician to the Northeastern Dispensary. He belonged to numerous societies and institutions, among them being the State Medical Society, of which, in 1853, he was President; the Academy of Medicine, the County Medical Society, the New York Society for Relief of Widows and Orphans, and the New York Pathological Society.

THE New York State Medical Association will hold its fourth annual meeting at the Hotel Brunswick, New York, on September 27th, 28th, and 29th, under the presidency of Dr. Isaac E. Taylor, of New York.

THE Emperor of Austria has conferred upon M. Pasteur the decoration of the Order of the Iron Crown, with the title of Baron.

SOCIETY PROCEEDINGS.

NINTH INTERNATIONAL MEDICAL CONGRESS.

Held at Washington, September 5-10, 1887.

(Specially reported for THE MEDICAL NEWS.)

GENERAL SESSIONS

THURSDAY, SEPTEMBER 8TH.

THE Congress was called to order shortly after 10 o'clock, by the President, N. S. Davis, M.D.

INOCULATION AGAINST YELLOW FEVER.

The Associate Secretary, Dr. W. B. Atkinson, of Philadelphia, then read the resolutions adopted in the Section of Public and International Hygiene on the investigations of Dr. Domingos Freire, of Brazil. (See THE MEDICAL NEWS, Sept. 10th, page 320.)

ENTERTAINMENTS.

DR. A. Y. P. GARNETT, Chairman of the Committee of Arrangements, announced that as the time had been short for the change of tickets for the banquet in the evening, he feared many were not aware of the change, and that as a ticket would be absolutely required of those applying for admittance, he asked that the Chairmen of the various Sections would announce the fact from their respective chairs at the morning sessions.

THE ANNIVERSARY OF THE DISCOVERY OF AMERICA.

The following resolution was then proposed:

Whereas it is proposed to hold at the city of Washington, in 1892, an international celebration in honor of the four hundredth anniversary of the discovery of America by Christopher Columbus, and an exposition of the history, arts, and industries of all nations,

Resolved, That the International Medical Congress favors this patriotic movement, and commends it to the nations of the world.

This announcement elicited from DR. SEMMOLA an enthusiastic approval of the project. He spoke as follows:

"Gentlemen: There are things so great in the history of humanity that it is not possible to glorify them as much as they deserve. The discovery of America by Christopher Columbus is one of these. I have been educated from my infancy to venerate the memory of that immortal Italian, but I confess that now that I have crossed the ocean, even with all the facilities that steam and nautical science afford, it is the first time that I have been able to conceive a correct idea of the genius of Columbus, and to appreciate his enterprise, his hardihood, and the foresight which never failed him to the last day of his journey. So that now I prostrate myself before Columbus, and worship him as of divine emanation.

"Therefore, gentlemen, I rejoice with you, and congratulate you from the bottom of my heart for the noble sentiment that has inspired you in proposing an international testimonial in honor of the immortal son of Genoa; and be it as an Italian, or as a member of the Parliament of Italy, as a delegate of my Government to this Medical Congress, and even as one of its Vice-Presidents, with infinite delight do I associate myself with this proposition, and thank you most sincerely."

The following gentlemen were announced as having been appointed on

THE COMMITTEE TO SELECT THE NEXT PLACE OF MEETING,

in accordance with the resolution adopted on the preceding day

Argentine Republic—Dr. Villa, of Buenos Ayres.

Austria-Hungary—Dr. Farkas, of Buda-Pesth.

Belgium—Dr. Servais, of Antwerp.

Brazil—Dr. Freire, of Rio de Janeiro.

China—Dr. Boone, of Shanghai.

France—Dr. Landolt, of Paris.

German Empire—Dr. Martin, of Berlin.

Great Britain—Dr. Pavy, of London.

Italy—Dr. Semmola, of Naples.

Japan—Dr. Saiga, of the Imperial Navy.

Mexico—Dr. Alvarado, of Mexico.

Russia—Dr. Reyher, of St. Petersburg.

Spain—Dr. Lalearda, of Seville.

Sweden and Norway—Dr. Tillman, of Halinstadt.

Switzerland—Dr. Cordes, of Geneva.

Turkey—Dr. Post, of Beirût.

United States—Dr. A. L. Gihon, United States Navy.

Egypt—Dr. Grant (Bey), of Cairo.

DR. MARTIN, of Berlin, then took the chair.

DR. P. G. UNNA, of Hamburg, delivered a general address on

THE RELATION OF DERMATOLOGY TO GENERAL MEDICINE.

(See page 325.)

At the close of the address, SIR JAMES GRANT, of Canada, moved that a vote of thanks be tendered Dr. Unna for his very able and exceedingly interesting address. Adopted.

FRIDAY, SEPTEMBER 9TH.

PRESIDENT DAVIS called the Congress to order at a few minutes after 10 o'clock.

ENTERTAINMENTS.

Assistant Secretary, W. B. Atkinson, announced that the foreign delegates and their wives alone, would be admitted to the Government Steamer for the excursion to Mount Vernon at 10.30 A. M. to-morrow, and that the Grasslands entertainment was restricted solely for the foreign delegates and their ladies.

A COMMEMORATIVE MEDAL.

DR. J. M. TONER announced that it was known to most of those present, that there had been a movement to have struck a medal commemorative of the Ninth International Congress, similar to those of previous congresses. He was happy to state that the subscriptions already received were sufficient to warrant the issue of the medal, and that it would be struck at the United States Mint at Philadelphia. Two hundred have been subscribed for, but as it is probable that many more desire them, he made this announcement in order to give them an opportunity to subscribe and pay five dollars to the Treasurer.

THE NEXT MEETING OF THE CONGRESS.

The SECRETARY-GENERAL read the report of the Committee appointed yesterday, to select a place and time for the meeting of the Tenth International Medical Congress. The Committee reported that Dr. M. Semmola, of Italy, had been elected *Chairman*, and Dr. Assaky, of Bucharest, *Secretary*.

By a vote which was, with one exception, unanimous, Berlin was chosen as the place of meeting, and Prof. Virchow was named as President of the Congress.

DR. J. D. PHILLIPS, of London, then took the Chair.

DR. G. FIELDING BLANDFORD, of London, delivered a General Address on

THE TREATMENT OF RECENT CASES OF INSANITY.

The speaker prefaced his address by the statement that he had expected to read his paper before the Section on Psychology, and that had he known that he would be called upon to address an assemblage like the present one, he might have prepared something very different.

(This address will appear in full in the next number of THE MEDICAL NEWS.)

At the close of the address, DR. CORDES, of Geneva, arose and after complimenting the speaker, in French, on the high character of his address, moved a vote of thanks. The motion was seconded by Dr. Kretzmeyer,

of New York, who spoke in German, and it was unanimously adopted.

RAILROAD ACCIDENTS.

The SECRETARY-GENERAL then read the following resolutions adopted by the Section on Public and International Hygiene:

Whereas, The whole community has been shocked by the almost daily occurrence of terrible accidents on many of the railroads, causing considerable loss of life, and by the neglect of the most elementary sanitary laws,

Whereas, This Section considers itself in a degree the guardian of public health,

Resolved, That the attention of this Ninth International Medical Congress be respectfully called to this most important question, and that it be requested to use its influence to obtain the necessary reform.

The President then announced that the Congress would meet at 9.30 Saturday morning, for the purpose of a formal adjournment.

Adjourned.

SATURDAY, SEPTEMBER 10TH.

At 9.30 A.M., about one hundred and fifty members and nearly fifty visitors met for the formal closure of the Congress, and a few minutes later, the assemblage was called to order by the President.

MISCELLANEOUS BUSINESS.

SECRETARY-GENERAL HAMILTON read by title three sets of resolutions passed in the Sections of yesterday. The first was from the Section of Climatology in regard to the establishing of national bureaus of vital statistics; the second was from the Section of Military and Naval Medicine, and related to the prohibition of the use of explosive projectiles in naval warfare; and the last was a resolution from the Section of Public and International Hygiene, relative to the teaching of hygiene in the public schools.

THANKS AND CONGRATULATIONS.

DR. GRAILY HEWITT, of England, arose and said:

"I come before you as one of the foreign members of the Congress, and I have been requested to express in a few words the appreciation which is felt by the foreign members of this Congress of the efforts which have been made by the executive of the Congress for the furtherance of the object of this meeting, and to convey to them our thanks for the attentions that have been bestowed upon us, and our appreciation of the success which had attended their efforts. I desire also to express our sense of the hospitality, one of kindness and attention which we have received, both in public and private, at this great meeting—attentions which will contribute to make our visit to Washington a source of congratulation and a happy memory in the future. I beg to submit to you the following more formal expression of our ideas." Dr. Hewitt then read the following:

"On the part of the foreign visitors and officers of the Congress, we desire to convey to the President of the United States our best thanks for his presence at the ceremony of the inauguration of this Congress. We desire to express to the Executive Committee of the Congress, particularly to Dr. Henry M. Smith, Dr.

John B. Hamilton, Dr. A. Y. P. Garnett, Dr. Toner, and Dr. Arnold, our very high appreciation of the efforts they have made for efficient organization, action, and working of the Congress, which have rendered it so great a success. We would convey our warmest thanks to the citizens of Washington for the kind hospitality, both public and private, we have received during our pleasant visit to their beautiful city."

Dr. Hewitt's remarks and resolutions were loudly applauded.

DR. MARTIN, of Berlin, then expressed in German the gratitude which he and his fellows from abroad felt toward those having in charge the arrangements of the Congress. He had not come here without some doubts of the success of the Congress, but these had been all removed, and he now felt that it had taken a high rank with former Congresses. The names of the entertainers cannot, like those of the winners at the old Olympic games, be recorded in letters of gold, but we can express our sentiments by a sincere vote of thanks.

DR. LANDOLT, of Paris, next arose, and said in French:

"I have been commissioned to express to the President of the United States our sentiments of profound gratitude. Although feeling that I am unable to find words proper for the occasion, I accepted the honor, since the gratitude that springs from the heart had no need of eloquence to make it understood. Mr. President and gentlemen, we have already assisted at a series of International Congresses. We have been well received everywhere. The countries of Europe have rivalled each other in their zeal to make our stay with them agreeable in their most beautiful cities; but it has not often been our lot to see the chief of the State mingle in person among us and take part in our labors. The President of this great republic came among us to speak us welcome with his sympathetic voice. He invited us to his own home and gave to each of us a hearty grasp of the hand, significant of his most cordial hospitality. The sanction given President Cleveland to our Congress has given the greatest charm to our stay in this capital. Returning to our hearts we will preserve the most grateful and respectful remembrance of the President of the Republic, and we say to the whole world that the United States, already so favored, possesses above everything a chief who directs them surely in the way of progress and prosperity."

DR. EDMUND OWEN, of London, then arose and said he desired to second Dr. Hewitt's resolutions. He thought he was admirably qualified to discourse on American politics, as he was entirely ignorant of the subject. In science they had no politics. "We are extremely happy," he said, "to have visited the United States during the presidency of Mr. Cleveland." He said he asked an American friend the other day, and a very intelligent man, if he voted for Mr. Cleveland, and the American said no. Then he asked the American if he were satisfied now, and the laconic answer was, "Guess I am." "If," said Dr. Owen, "that question was put to this meeting, 'are we satisfied?' I say, 'guess we are.'" A great man like the President might have found something else to occupy his attention, say, in the White Mountains about this time of the year; he might have been driven away by the doctors, but instead of that he remained here to welcome them.

"When the history of his grand country is written," he said, "we trust President Cleveland will have a niche in the temple of fame side by side with those great men, Lincoln and Garfield. When you are in our country we love to hear you say, 'We admire your queen.' We can say to you with all truth we admire, we love your queen of beauty and grace, and in seconding this vote of thanks we simply express a prayer that Mr. President Cleveland and Mrs. Cleveland may long continue in strength and health to preside over a happy, a prosperous, and a united country."

PRESIDENT DAVIS said that it was hardly necessary to put a question of this character, but in order that it might be recorded, he would do so. The vote was unanimous.

A PRESENTATION.

There was then a pause of a minute, when the SECRETARY-GENERAL arose, and on behalf of the Section of Oral and Dental Surgery, presented to Dr. Hunt, of Washington, a handsome gold-headed cane as a token of the appreciation of his courtesy.

FAREWELL.

After another brief pause, DR. HAMILTON again arose and said:

Mr. President: I could not fail to be deeply sensible of the great kindness bestowed upon me, and the many words of encouragement received both during this present meeting and for the past six months. I am profoundly grateful for the expressions now placed upon record. But, sir, the success of this Congress is due to no one man. All on this side worked with the spirit and enthusiasm of Americans whose hearts were in the work, but all our efforts would have been in vain and the strongest would have failed had it not been for that noble army of scientific men abroad, who, deaf to all misrepresentations of disappointed factionists, came from old England, the universities and vine-clad hills of France, the seats of learning in Germany, the cities of the Alps, from sunny Italy, the lowlands of Holland, the fastness of the Danube, from far-off, but ever-near Russia, from the golden shores of China and Japan, from Cairo and the sands of Egypt, and the everlasting hills of Palestine, and I say to these representatives here assembled, that to them we owe a debt of gratitude which time cannot efface, and as these our dear colleagues have braved the dangers of the deep, and sustained, in some cases, the shock of calumny to be with us, so let us here say that when we again meet in Berlin in 1890, let it be to renew those friendships formed here, and to grasp once more the hands of those who have been true to us now.

DR. DAVIS, the President, then asked indulgence for a few words. After referring to his more than half a century of professional life, he said it had been one of the objects of his life to promote the harmony which should exist among all branches of medicine. It was to-day the happiest feeling of his life that he could now stand here in this Capital of the United States, and not only see the profession he loved united and working harmoniously, but to stand here among representatives from almost every country on the globe. He thanked those who had come across the water to attend the Congress, not only in his own name, but in the name of the profession in America, in whose name the Con-

gress had been invited to sit here. There were, he said, members of the profession from every State in this great Union assembled here to greet the foreign members. There is a larger gathering than there has been in any other Congress, leaving out the profession of the city in which they have been held. He thanked the members of the Congress for the courtesy shown him in sustaining him in the discharge of his duties. "Life with me," he said, "is not long, but if it is spared with sufficient health I shall take great satisfaction in meeting my friend, Dr. Martin, and all his comrades in Berlin in 1890."

He then declared the Ninth International Medical Congress adjourned *sine die*.

SECTIONS.

General Medicine.

WEDNESDAY, SEPTEMBER 7TH.

DR. JOHN A. OCTERLONY, of Louisville, read a paper on the

NATURAL HISTORY OF DISEASE.

He thought that the physician of to-day is too fond of prescribing medicines and not trusting Nature to do its duty. Nature possesses greater powers than we realize, and frequently the question must arise as to whether the patient died of the disease or his doctor. It is not to the discredit of therapeutics that nature is the greater power, it is rather the glory of this branch of medicine that it knows its own limits. As illustrative of his meaning he mentioned the various treatments which have been in vogue for the treatment of pneumonia, and said that the recovery of many of the cases simply showed that even the disease, and the doctor who aided the disease by bad treatment, could not withstand the tendencies of nature to promote a cure. In support of the truth of his theory that nature has such powers he mentioned cases he had seen of external cancer spontaneously cured. He advocated, therefore, to a considerable extent the "let the patient alone" doctrine.

DR. CRONIN, of Buffalo, spoke of the difficulty of leaving the patient alone with Nature, by reason of the distrust of the patient and his friends.

DR. SCOTT, of Cleveland, distinctly believed in the proper use of drugs in every branch of medicine.

DR. A. B. ARNOLD, thought there was a point to be reached halfway between too much medication and too little.

DR. PAVY, of London, supported Dr. Octerlony's views on the non-interference with nature, but did not enter into a discussion of the paper to any length.

DR. T. D. CROTHERS, of Hartford, then read a paper on the

DISEASE OF INEBRIETY AND ITS TREATMENT.

He believed the causes of inebriety to be as follows, namely: Heredity, physical shocks, structural changes of the brain, disturbances of nutrition, and certain acute or chronic diseases which develop into inebriety. Regarding the whole condition as one of an actual disease rather than a depression of moral sense, the author treated the subject from the standpoint of an alienist, and brought forward interesting data to show the limit of his remarks. Examination of records has shown

that drunkenness passes over various countries in cycles. Thus, the proportion of drunkenness in Sweden and Norway markedly increased once in every fourteen or fifteen years, in some other of the European countries in every eight years, and so over the whole world.

The disease inebriety may come on slowly or rapidly and may last or be transient. In some cases it simply remits, in others it comes, and goes never to return.

Statistics show that the number of moderate drinkers is decreasing, while the number of drunkards is increasing. He deprecated the mislaid efforts of those who advocate a treatment resting on a moral basis, since, as he before stated, inebriety is in reality on the border land of insanity, in many cases the sufferers are monomaniacs indeed.

He also thought that the present methods of treating drunkards in hospitals is wrong, since the food and surroundings of such institutions, and more particularly "reform" schools, is frequently absolutely harmful, in the depressed and perverted state of the inebriate's system, and, instead of placing his body in a healthy condition, leaves it in such a state that it wants more alcohol for support, and fails to bring the brain up to its proper standard.

General Surgery.

WEDNESDAY, SEPTEMBER 7TH.

THE discussion of DR. MACLEAN's paper on

LAPARO-NEPHROTOMY

(See THE MEDICAL NEWS, September 10th, p. 313)

was first in order.

DR. HERFF, of San Antonio, Texas, agreed with Dr. Maclean that, in suitable cases, laparo-nephrotomy is the proper operation. Some years ago he had a case of a young woman who was newly married, and when about two months pregnant, she discovered a tumor on the right side, which was nearly as large as a child's head. She had no pain, and except that she had this tumor, she was in good health. The tumor, however, annoyed her very much, and she insisted on an operation being done. He, therefore, opened the abdomen in the median line, and removed the tumor. The remarkable thing about the case was that the tumor, which he thought was an ovarian one, proved to be the kidney and suprarenal capsule. From the lower end of the tumor the lower part of the kidney was hanging, while the upper part consisted of the suprarenal capsule enormously enlarged, sections of which presented under the microscope the appearance of the long cells of myxoma. The patient made a good recovery, and two years after the performance of the operation she was in perfect health. This was a case of both removal of the kidney and suprarenal capsule.

DR. HUGHES preferred the abdominal incision in all cases where it is practicable, and, as the result of his experience in these cases, would give the preference to the side, between the ribs and the crest of the ileum.

DR. LANGE, of New York, said that in a large number of these cases of tumors of the kidney, where there is fluctuation they are cases of pyonephrosis of usually very large size. He had operated several times for the removal of the kidney, and performed both the anterior and posterior operations. In the small tumors, and in

some of the larger ones, he preferred to make a small lumbar incision, empty the contents of the tumor out as far as possible, then wait until the remainder of the tumor lessens in size, which it will be very apt to do, so that it can be gotten out through even a very small hole or incision. Sometimes in renal calculi he had performed laparotomy, or rather the operation in the lumbar region, and then, after making this incision, by placing the patients in bed lying on their stomachs on a pillow, the kidney would float up where the wound was made, and could then be easily gotten up, and the calculus removed.

DR. M. H. RICHARDSON, of Boston, next read a paper entitled

GASTROTOMY FOR FOREIGN BODIES IN THE ŒSOPHAGUS,

in which he said, that this operation was intended only for the removal of foreign bodies in the œsophagus which had passed so far down the œsophagus as to be lodged near the cardiac orifice. In regard to the length of the incision, it was not fixed; it might be only a very short one, or it might be large enough to put the hand inside the stomach, so as to reach up into the œsophagus, if that should be necessary, in order to extract the foreign body. The incision through the skin should be made over the cardiac end of the stomach, or might be made in the median line, and the incision through the walls of the stomach must be made in the cardiac end of the stomach. All the caution necessary in making this was to get the incision made without wounding the convexity of the lesser curvature of the stomach; and, in order to avoid this, the better way was to put the lesser curvature on the stretch.

He concluded that if the foreign body was lodged within six inches of the lower edge of the cricoid cartilage, it was best removed by an operation from the side or above, but if situated more than six inches from the cricoid cartilage, gastrotomy was the best thing to be done.

DR. F. S. DENNIS, of New York, then read a

REPORT OF AN AMPUTATION AT THE HIP-JOINT FOR THE REMOVAL OF A MALIGNANT GROWTH, SARCOMA.

This case was that of a young man aged seventeen years, who had no bad family history, and who had always been in good health until about five months prior to his admission to the hospital, when his weight was eighty-five pounds. Five months prior to his admission he had first noticed a dull pain in the thigh, and shortly afterward he discovered a swelling in the thigh. He had had no fall or blow.

About two months after the first appearance of the pain the tumor was aspirated, and about ten ounces of bloody fluid drawn off. The swelling was fusiform in shape, the skin was purple, and large veins were to be seen on the surface of the tumor, while the glands of the thigh and groin were much enlarged. The diagnosis was that it was a sarcoma of the femur, and amputation at the hip-joint suggested as the only means of saving life.

This amputation was done and the wound dressed antiseptically. The wound was entirely healed by the sixth or eighth day after the operation. After the pa-

tient left the hospital the wound reopened a little and discharged pus mixed with blood; this was found to be due to sloughing of the ligamentum teres, upon the removal of which the wound healed kindly, and the young man is now well.

DR. JASPER C. GARMANY then read a paper on the

SURGICAL TREATMENT OF EPILEPSY BY TREPHINING,

in which he related the case of a girl about eighteen years of age, struck on the head with a brick falling from a house-top and causing fracture of the skull. The skull was trephined and the splinters of bone removed, but some time after the wound had healed she began to have attacks of epilepsy, for which ordinary treatment was unavailing, and he finally operated on her with an entirely successful result. As a result of his researches on the subject he had found that lesions in the frontal and parietal regions are followed usually by the same symptoms, and that over fifty per cent. of the lesions in these regions are followed by epilepsy, which later on is complicated by insanity. Trephining at the site of the lesion and removing the cicatrix is usually followed by complete relief.

DR. SAMUEL BENSON, of London, read a paper on

FISTULA IN ANO OF THE HORSESHOE VARIETY.

Horseshoe fistulæ, as at present understood, are complete fistulæ, the external opening being situated on the opposite side of the bowel to the internal opening. This kind of fistula is rare, having been found five times in 750 cases of rectal disease. From these cases we gather that fistula in ano of the horseshoe shape may be complete or incomplete. Horseshoe fistula may be complicated with prolapsus. The most usual complication is anal ulcer. Sometimes polypus is also found. The average age of the patient is thirty-five years; males and females being attacked indiscriminately. The average number of days in bed is fourteen. If a correct diagnosis is made, the treatment consists in laying open the sinuses and paring the edges with scissors, dividing or paralyzing the sphincter muscle, and packing it systematically with cotton-wool to prevent the edges sticking together, and getting the wound to heal from the bottom.

A paper by ARTHUR TREHERN NORTON, F.R.C.S., of London, was then read by the Secretary in the absence of the author. It was entitled

REMARKS ON RODENT ULCER OF THE RECTUM.

In which the author declared that there is an ulcer of the rectum, persistent, unyielding to treatment, advancing to complete stricture of the rectum and usually appearing after thirty years of age. The ulcer begins immediately within the anus, after a time extending and completely surrounding the rectum; it is accompanied by a pain which is not usually severe and as it extends up the rectum contraction takes place with all the signs of stricture. Treatment by dilatation sometimes relieves for a time. From the clinical features of the disease and the microscopical characters the author was of the opinion that the disease is identical with rodent ulcer and suggested that further investigation into its pathology be made.

DR. GRANT (Bey), of Egypt, then presented a
REPORT OF SOME CASES OF LIVER ABSCESS AND
THEIR TREATMENT,

in which he gave the opinion that in all cases of liver abscess we should first aspirate the abscess, and if that was not followed by cure then lay the abscess open by a free incision, and in extreme cases excise a portion of the ribs (one or more) over the site of the abscess, so that free access might be had for cleaning out the abscess cavity thoroughly with antiseptics.

DR. LEWIS H. SAYRE, of New York, then read a paper on

THE TREATMENT OF PSOAS ABSCESS BY POSTERIOR
LUMBAR INCISION,

in which he strongly insisted on the early and free posterior and anterior incision in these abscesses and this to be followed by thorough drainage.

DR. EDWARD OWEN, of London, earnestly deprecated "ostrich surgery" in these cases and advised early opening of the abscess with free drainage.

DR. SPRENGLE, of Dresden, thought that in many cases there would be absorption of the pus if we waited for it and if we opened the abscess it was best to do it with an aspirator or fine trocar.

DR. LANGE, spoke of the constitutional treatment along with the surgical, and thought that he would not open these abscesses if he could avoid it until after the acute stage had passed.

DR. CHAVASSE, of Birmingham, England, thought it best to open these abscesses as soon as possible and give the sufferers a chance.

DR. E. ANDREWS, of Chicago, read a paper on

THE REMOVAL OF SEQUESTRA BY SOLUTION IN ACIDS, in which he gave his experiments in detail and related a number of cases in which the sequestra had been removed by the use of acids without operation. He recommended that hydrochloric acid be used of a strength a little weaker than the official dilute acid.

Gynecology.

WEDNESDAY, SEPTEMBER 7TH.

DR. KELLOG, of Michigan, read a paper entitled

UTERINE DISPLACEMENTS CORRECTED BY MODIFICATIONS OF THE ALEXANDER OPERATION, WITH REPORT OF TWENTY CASES.

He still believes in the value of this operation notwithstanding unfavorable criticism. It is not only adapted to cases in which retroflexion alone exists, but also for those in which there is prolapse of the uterus, or of the uterus and ovaries. He believed it safe and effective if properly done, and much more likely to produce a cure than pessaries. The latter seldom result in radical cure, and are usually a source of annoyance and disgust to the wearers of them. It is also preferable to electricity as a remedial agent, though faradization may be employed in conjunction with it. The author had observed particularly the stimulating effect which it often has upon an enlarged uterus, producing great contraction and involution of the organ, as is frequently observed after the performance of Emmet's operation.

DR. A. MARTIN, of Berlin, said he had come to the Congress chiefly for the purpose of obtaining information concerning this operation. Though he was in the habit of seeing a very large number of cases in which displacement of the uterus existed, he had not yet seen a case in which this operation seemed indicated. His position was that which was held by most German gynecologists, for the operation had been done very few times in Germany.

DR. DOLÉRIIS, of Paris, France, thought that Alexander's operation had been done only thirty times in France, twenty-four of the operations being his own. He believed that the operation was a logical one for prolapsus and retroflexion. An estimate of its value must be formed from both a technical and a practical standpoint. As to the former, the operation is not difficult, though sometimes rather tedious from difficulty in finding the ligaments and isolating them from surrounding tissues. The operation under antiseptic precautions is perfectly safe, even when the peritoneum is drawn up and stitched into the wound. The operation seemed to him much more satisfactory than the use of the tampon, or the pessary. When prolapsus is complicated with retroflexion, the operation is not indicated.

DR. TRENHOLME, of Montreal, objected to the general use of the operation. He believed it to be difficult, perhaps dangerous, and often ineffective.

DR. BOZEMAN then discussed Dr. Spanton's paper. He had observed as the most frequent causes of cystitis cicatricial contractions of the vagina, flexures of the uterus, and diseases of the urethra. For the first class of cases he had found dilatation of the contracted vagina as well as incision and division of bands useful, the vagina being packed with cotton-wool, while the patient is in the knee-chest position, by his so-called *columnning* method. The same plan of treatment is applicable if a flexion causes the cystitis. If the disease arises from trouble in the urethra, as from redundancy of the mucous membrane, Emmet's button-hole operation in the inferior wall of the urethra may be performed, or a large opening may be made in the bladder. This operation of cystotomy was first performed upon the female in this country by the speaker in 1861, though Dr. Willard Parker had previously done it upon the male. The speaker's case was subsequently reported at a meeting of the New York State Medical Society.

DR. BALLS HEADLEY, of Australia, in discussing Dr. Hewitt's paper, advised, with the improvement of the general nutrition, the proper use of pessaries, or, if the organ were very large and the lips of the cervix everted, the performance of Emmet's operation.

DR. HEWITT, in closing, advocated preventive treatment in the way of suitable food and hygiene for those women whom he should consider predisposed to uterine displacement. If this were done, morbid changes in the shape and structure of the organ would not usually occur.

Therapeutics and Materia Medica.

TUESDAY, SEPTEMBER 6TH.

DR. HUGH HAMILTON, of Harrisburg, Pa., opened the Session with a paper on the

CHEMICAL PHILOSOPHY OF REMEDY,

which endeavored to prove that the therapist must

have regard for the ptomaines and like substances in treating disease, and use remedies capable of preventing their action.

DR. J. G. SINCLAIR COGHILL, of the Isle of Wight, followed with an interesting essay on

CHLORATE OF POTASH.

He was of the opinion that this drug has been unjustly and too hastily relegated to an inferior therapeutic position. The original researches of Wöhler and others seemed so unsatisfactory, in view of the undoubted therapeutic activity of the salt, that as far back as 1878 Dr. Coghill arranged a series of observations, the chemical part of which was conducted by Mr. Otto Helmer, F.C.S., with characteristic energy. He verified many of the experiments in his own person, and applied more than one novel process for attaining correctly the quantitative reduction of the chlorate as eliminated. The results were such as only to confirm the views of previous observers. It may be stated, generally, that the therapeutic properties of chlorate of potash are those suggested by its chemical constitution and properties. In all states of the system where the blood is impoverished either in amount or quality, where its nutritive efficiency, especially as regards oxygen, is impaired, the chlorate of potash is indicated, either alone or in such combinations as the complexity of the conditions present demand. In appropriate cases, its action, when judiciously administered in proper doses, will be found most potent. It is also a cardiac stimulant in small doses, and seems to exert an important influence on the nutrition of these tissues generally. Its action as an antiseptic, particularly in arresting chemical decomposition within the body, is to be considered as one of its most valuable properties.

DR. H. A. HARE, of Philadelphia, called attention to some of the dangers of using chlorate of potash internally, and some of the popular fallacies regarding its action in the human body.

DR. J. SOLIS COHEN, of Philadelphia, recommended its use very highly in diphtheria on account of its action on the passages involved. He spoke of the possible dangers under its administration, and thought that the condition of the urine should be constantly and carefully noticed during its administration, the drug being stopped as soon as decreased secretion asserted itself.

Other gentlemen spoke highly of the drug for its influence on all mucous membranes.

DR. TRAILL GREEN, of Easton, Pa., spoke of its usefulness, but preferred chlorate of soda owing to its less irritating and depressing qualities. He also thought its solubility a word in its favor.

DR. CHARLES D. F. PHILLIPS, of London, England, then read a paper on the

INFLUENCE OF CERTAIN DRUGS ON THE ACTION OF THE KIDNEY, NOTABLY CAFFEINE.

He described the use of the ordinary oncograph, and detailed interesting results regarding the contraction and dilatation of the kidney under several diuretic drugs. His results with caffeine show that in large or too frequent doses it diminishes the secretion of urine, whereas small doses cause active diuresis.

The Section then adjourned until Wednesday afternoon.

Pathology.

TUESDAY, SEPTEMBER 6TH.

DR. E. O. SHAKESPEARE, of Philadelphia, reported an

EXPERIMENTAL INVESTIGATION ON THE CAUSE OF TETANUS.

He gave a detailed account of numerous experiments made between August 1st and September 4th of the current year, and offered the following conclusions drawn from these researches:

1. Traumatic tetanus of the horse and mule is at least sometimes, if not always, an infectious disease transmissible to other animals, and, therefore, possibly also to man; and during the progress of this disease a virus is elaborated and multiplied which is capable of producing the same infectious disease in some other animals when placed beneath the dura mater of the cerebrum.

2. This virus is contained in the medulla and spinal cord of the animal suffering the disease. It is capable of being strengthened in virulence by inoculation *sub dura cerebri*, from rabbit to rabbit, like the virus of hydrophobia, and, as in the latter disease, is also capable of attenuation by exposure for a sufficiently long time to the action of dry air at a temperate or summer heat; and, again, like rabic virus, its effects are far more intense when it is inserted *sub dura cerebri* than when injected under the skin or between the muscles of the body.

3. The author reserves his conclusions concerning a prophylactic effect of inoculations of the attenuated virus until the completion of experiments which are at present in progress.

He then drew the following conclusions from his own experiments correlated with those of Nicolaier, Carle and Rattone, Rosenbach, Ferrari, Flügge, and others.

1st. Traumatic tetany of the lower animals and of man, at least sometimes, possibly always, is a specific infectious disease due to the action of a specific infectious virus, which exists in the tissues at the seat of infection, in the blood, and in the central cerebro-spinal nervous system.

2d. In view of the experimental evidence which we possess at present, and of many unassailable observations of surgeons and veterinarians, there seems to be ample warrant for the admission, that not infrequently tetanus in man is acquired directly or indirectly from some of the domestic animals, notably the horse, which surround him.

DRS. D. E. SALMON and THEOBALD SMITH, of the Bureau of Animal Industry of the U. S. Department of Agriculture, presented a report of some

EXPERIMENTS ON THE PRODUCTION OF IMMUNITY BY THE HYPODERMATIC INJECTION OF STERILIZED CULTURES.

The experiments were carried out as follows: Culture tubes containing about 10 c.c. of beef infusion 1 per cent. peptone, were inoculated with hog-cholera bacteria and placed in the incubator at 93.2° to 96.8° F. After a certain number of days, varying from three to ten, the tubes were exposed to a temperature of 136.4° to 140° F., for about one hour. Inoculation of fresh tubes showed that the bacteria had been destroyed. This test was always resorted to, to make sure that no living bacteria

were injected. From 1 to 1.5 c.c. of this culture liquid was injected with a hypodermatic syringe beneath the skin of one pectoral muscle. This injection was repeated once or twice. Some days after the last injection, the bird was inoculated with living bacteria. About $\frac{3}{4}$ c.c. of a beef infusion peptone culture was injected beneath the skin of the other pectoral or into the superficial layer of muscular fibres. The vaccinated pigeons remained alive and well, the control pigeons nearly all died.

The conclusions drawn from these experiments were as follows: The birds are protected by the injection of sterilized cultures so as to resist a fatal dose of living bacteria. The sterilized cultures contain only the products of bacterial growth. Among these the ptomaine-like bodies—some of which we now know owing to the researches of Brieger, are very likely the agents that produce immunity.

Diseases of Children.

TUESDAY, SEPTEMBER 6TH.

DR. VICTOR C. VAUGHAN, of Michigan, read a very interesting paper on

THE USE OF COW'S MILK IN THE FEEDING OF INFANTS.

He pointed out the necessity of resorting to cow's milk; the care of milk used in infant feeding; the fermentations that occur in milk; the development of poisons in milk, such as tyrotoxin; the preservation of milk; the chemical differences between the milk of woman and that of the cow; and the proper use of prepared milk foods.

In regard to the use of digestive ferments in cow's milk, he thought that in strong children they need not be given, that in weak children they must be used, but only partially, since all the work must not be taken from the stomach, which in that case would soon lose its power.

In reply to an inquiry, whether he preferred to use milk from a herd or from a single cow, he replied that the milk from the herd is perhaps the best. He called attention to the fact, however, that one diseased cow's milk would, in the course of a few hours, change that of the whole herd into an equally poisonous mass.

DR. BOOKER, of Baltimore, advocated sterilization by heat, before using milk obtained in cities.

DR. J. LEWIS SMITH, of New York, asked Dr. Vaughan his opinion in regard to the use of farinaceous matters in cow's milk to prevent too solid clotting of the casein.

DR. VAUGHAN expressed himself as unable to make any reply to this question. He believed that cholera infantum is probably, in many cases, due solely to the presence of tyrotoxin, developed either before or after the introduction of the milk into the stomach. He detailed experiments on cats, in which, after the administration of the poison, symptoms closely resembling those of cholera infantum asserted themselves.

DR. W. P. NORTHRUP, of New York, read a paper on the

ANATOMICAL CHARACTERISTICS OF MEMBRANOUS CROUP AS OBSERVED IN FATAL CASES IN THE NEW YORK FOUNDLING ASYLUM.

He analyzed a series of cases observed post-mortem

in the Asylum, with reference to the onset of the affection and the location of the membrane. The cases cover a period of five years. The greatest mortality was between two and three years, at which age 36 died out of 90 cases. Most of the cases showed an extension of the membrane into the bronchi. Autopsies in intubated cases showed only a rubbing off of the epithelium of the surface. In some cases the wearing of the tube for two or three days caused ulceration of the mucous membrane opposite the lower end of the tube, in some cases even the cartilages being affected. The ulceration is due to frequent friction and intermittent pressure due to swallowing. Some cases died from pulmonary collapse because of bronchial occlusion. Sometimes death was due to pneumonia caused by an extension of the inflammation by continuity. The best test for diagnosis of pneumonia post-mortem is to attempt inflation of the affected tissue; if it inflates, collapse is indicated; whereas, if it remains solid there can be no doubt of pneumonia. He did not believe that septic pneumonia was occasioned by the use of the O'Dwyer tube. He experimented with milk and bone charcoal, causing intubated patients to swallow these and finding no evidence of either in the lungs of the cases that died. This shows that there is little or no probability of producing living inflammation by food falling through the tube into the trachea and producing pneumonia. He summarizes his views as follows:

The cases here studied are 116 in number, 90 of which were sporadic and 26 epidemic. They all occurred in the New York Foundling Asylum, an institution which has the constant care of 1800 children from the ages of a few weeks to five and seven years.

2. In the sporadic cases, the larger, great tube of O'Dwyer caused no ulceration worthy of consideration.

3. In the epidemic cases, numbering 26, there were 5 serious ulcers.

4. The causes of death have been mostly extension of pseudo-membrane to the bronchi and pneumonia.

5. He had been able to find no evidence that milk or other foreign material has found its way into the lungs. The pneumonia is broncho-pneumonia and not "schluck-pneumonia."

DR. JOSEPH O'DWYER, of New York, then made some remarks on

INTUBATION OF THE LARYNX.

He began his experiments, he said, with intubation in 1880. He was induced to devise his tube because of the prejudice against tracheotomy at the institution with which he was connected, and the inability of the staff to present a single tracheotomized case that had recovered. "Like hundreds of others before," he at first used the flexible catheter and gradually shortened it for convenience and comfort to the patient. An essential principle in making them self-retaining is to have them larger below than at the glottis. He then exhibited the tubes, and showed how to introduce them. A large, tightly fitting tube will be self-retaining because of firm and equal pressure from all sides. It was by using such a tube that Bouchut had no trouble in its insertion. The same kind of a tube, because of the great pressure it exerts on the surrounding parts, gave Trousseau the only reason founded in fact, that could be adduced

against intubation. The small tube formerly used is objectionable for two reasons: one being the danger of its slipping into the trachea, and the other from overlapping of the upper end of the tube by the swollen mucous membrane. The present tube with the large shoulder prevented both these accidents. The advantage of the backward curve on the lower end of the tube, is to prevent the ulcerations found at the base of the epiglottis, which straight tubes have been known to cause.

He favors small tubes. When first seen they are supposed to be too small to allow of comfortable respiration. They are, however, ample. The objection to the large tubes is the danger of ulceration from pressure. He steadily reduced the antero-posterior diameter of the tube to the present size, until he no longer noticed laryngeal ulceration as a sequel of its use. It is not necessary, for comfortable breathing during rest, to have the respiratory channel as wide as it is normally found. He spoke of the mechanism of cough and the necessity for closure of the glottis and compression of the intrapulmonary air before its expulsion, so as to give it force enough to produce sufficient friction to carry away the material on the surface of the bronchial mucous membrane. Coughing or nose-blowing is impossible, unless preceded by closure of the glottis. In case of dyspnoea in an intubated case, removal and reinsertion of the same tube give marked relief, and if a larger tube is inserted credit for the relief is awarded to the larger tube. This is evidently incorrect. There are still two very serious defects to be overcome in intubation: 1st, difficulty in swallowing food, and 2d, difficulty in the elimination of membrane.

When established, perfected, and matured, this operation will remain unsatisfactory, from the complications and very nature of the disease itself. The first results, if good, will create enthusiasm; if bad, distrust.

He showed three instruments made for the extraction of false membrane, but has only tried one and that on the cadaver of a child. His was made on the principle of Otis' urethrometer. On introducing the tube it is important to have it so firmly attached to the introducer as to make them appear as a single unjointed instrument. He has never developed as much enthusiasm for the operation as others have. Thinks better results have been obtained by the conjoined use of the bichloride of mercury and intubation, than by intubation alone. The best results on record were obtained by Dr. Frank Huber, of New York, in this way. This paper was read on June 7, 1887, before the New York Academy of Medicine.

Intubation is better than tracheotomy because it avoids cutting, and can, therefore, be earlier and more frequently performed and thus save more lives.

DR. F. E. WAXHAM, of Chicago, then read a paper on

INTUBATION VERSUS TRACHEOTOMY IN THE TREATMENT OF CROUP.

Modified and new intubation instruments were exhibited in connection with this paper. A laryngeal dilator composed of diverging blades or bent scissors shanks was shown and has been successfully employed to dilate the glottis temporarily in place of the tube. An automatic rubber epiglottic attachment was shown attached to one of the tubes. A statistical table of ope-

rators, number of operations, and number of successes and failures was read in detail. Out of a total of 1007 cases 269 recoveries had taken place.

DR. C. G. JENNINGS, of Detroit, said his experience had been the reverse of that of the readers of the papers. Has performed 37 primary and 3 secondary tracheotomies. 26 of the 37 primary recovered. He had had 9 intubations and all have died. Of the 3 secondary operations after intubation, all died. He was compelled to favor tracheotomy in preference to intubation, yet he was forced to admit that Dr. Waxham's statistics spoke better for intubation than they did for tracheotomy.

In tracheotomy there is the advantage of having direct access to the diseased locality. In intubation this is not so. Deglutition is easier after tracheotomy than after intubation. Tracheotomy is particularly successful in those cases in which it is performed toward the end of the disease, and where the membrane has extended into the larynx. He has found after treatment in intubation cases fully as arduous as after tracheotomy.

DR. J. LEWIS SMITH, of New York, asked if all of Dr. Jennings' intubation cases had been relieved promptly of their dyspnoea.

DR. JENNINGS said they had with two exceptions.

DR. SMITH asked if intubation did not allow more time for tracheotomy.

DR. JENNINGS replied that he thought it had to precede tracheotomy with the use of the tube.

DR. W. P. NORTHRUP, of New York, said that in 33 cases he never had any trouble whatever. One of his cases that had the most trouble of all in swallowing, recovered, while some of those that died could swallow perfectly. He thought that the interference with deglutition is the only drawback to intubation.

DR. T. J. PITNER, of Jacksonville, Ill., though a believer in the operation of intubation, did not think Dr. Waxham justified in saying that all of those that recovered by this means according to some of his statistics would otherwise certainly have died. That was something no man could say.

(To be concluded.)

AMERICAN GYNECOLOGICAL SOCIETY.

Twelfth Annual Meeting, held at New York, September 13, 14, and 15, 1887.

(Specially reported for THE MEDICAL NEWS.)

FIRST DAY, SEPTEMBER 13TH.

MORNING SESSION.

The Society was called to order at 10.30 by the President, DR. A. J. C. SKENE, of Brooklyn.

Thirty-one Fellows were present, and about fifty invited guests, among whom were Doctors Ferrier, Doléris, and Apostoli, of Paris; Dr. Grant Bey, of Cairo, Egypt; Dr. Bauga, of Bombay; Drs. Graily Hewitt and Bantock, of London, England; Dr. Simpson, of Edinburgh; Dr. Martin, of Berlin, and Dr. Cordes, of Geneva, Switzerland.

DR. FORDYCE BARKER, of New York, made the following

ADDRESS OF WELCOME.

Mr. President, Fellows of the American Gynecological Society, and friends who honor us with their presence:

The pleasing duty has been assigned to me by our Committee of Arrangements to welcome you in behalf of the resident Fellows of New York and Brooklyn, and in behalf of the Academy of Medicine, and of our affiliated societies having the same aims and objects.

I feel warranted in referring to the success of our Society in one of its aspects. It has brought its Fellows into intimate relations of warm personal regard. It has made us acquainted with, not only the mental calibre and acquirements of our Associate Fellows, but it has made us to know their winning and lovable personal qualities.

Our discussions have not been wanting in sharp criticisms—or freedom in pointing out supposed errors in the statement of facts—or absurdities in reasoning—or fallacies in deduction—or the futility or danger of suggested plans of practice or operation. But not in a single instance that I have known has there appeared in our discussions anything bearing the semblance of personal rancor, of the sting of venom, or a desire to wound, or of an ignoble ambition to triumph by sharp personal repartee, but the courtesies of debate have always been maintained on a high level. Neither has the time of our meetings been wasted in listening to profitless and wearisome discussions of personal claims to priority. All of our Fellows seem wisely to have decided in their own minds, that their present and posthumous reputation will rest on the aggregate of good work they accomplish, and not on the single merit of being the first to suggest a plan of treatment or a special operation. All know that now claims to priority of whatever nature are sure to be contested, and possibly to be confuted at no very remote period, although perhaps after the claimant "has joined the majority," and is no longer able to defend or explain his claim. If by referring to these merits, I lay myself open to the charge of assuming that the American Gynecological Society is made up of gentlemen, I confess to the justice of the charge, and shall "die impenitent," appealing to the record of our discussions in the ten volumes of its transactions in proof of the validity of my assertions.

As modesty is well known to be our most prominent national characteristic, I have felt justified in saying this much, in order that our distinguished foreign guests who have honored us by accepting our invitations, and have come more than three thousand miles to do so, may better know the company they are to meet. To them I will say, many of you are well known to many of us personally. All of you are well known to all of us by the good work that you have done. We give you a warm welcome, with the anticipation that the interest of this meeting will be largely enhanced by your participation in its work. We hope that you will find our hospitalities acceptable and agreeable, and we feel assured that you will leave behind you a warm place in our hearts, which will bind us in as close affinity in our personal affections as we now are united in sympathy in our professional work.

We welcome also our friends of this city and from other parts of the country, whose interest in the subjects to which we are devoted, brings them here to watch our proceedings and to stimulate us to our best efforts. Your presence serves to imply a knowledge through the medium of our published *Transactions* of the work which the Society has done before, and an approval of it. We trust that your interest will be increased by this meeting.

DR. THOMAS ADDIS EMMET, of New York, then read a paper entitled

A STUDY OF THE CAUSES AND TREATMENT OF UTERINE DISPLACEMENTS.

He stated that he had long before pointed out that in every woman there was a "health line," or normal plane for the uterus; as long as the organ occupied that plane the circulation was unimpeded and the veins did not become over-distended. The disturbance due to prolapse of the uterus might also be produced by lifting the organ above the health line. Both ante- and retroversion, not due to inflammatory processes, might be unaccompanied by marked discomfort—in fact, a retroversion pessary with a long posterior curve, while it actually increased the anterior displacement, gave relief simply because it elevated the cervix to a higher plane. In short, the suffering in cases of displacement was not due to the displacement itself, but to extraneous causes, especially to periuterine inflammation. Whether the uterus was raised or lowered in the pelvis in consequence of the cicatricial contraction following inflammatory processes, the traction was always exerted at the only fixed point—*i. e.*, the neck of the bladder, whence the frequent desire to urinate. Prolapse was the usual displacement because of the increased weight of the uterus resulting from the impeded circulation.

Since the Fallopian tubes were attached to the fundus uteri at a higher point than the attachment of the broad ligament to the side of the pelvis, an inflammation confined to the peritoneum covering the tube would shorten the line and thus depress the uterus in the pelvis; if the inflammation extends from below upward the reverse would be the case, *i. e.*, the resulting adhesions would tend to elevate the organ. An inflammation of the connective tissue between the folds of the ligaments would result in destruction of that tissue, and extending to the peritoneum forming Douglas's pouch, would form adhesions which would raise the uterus; as the folds of the ligament on one side became separated, the organ would be drawn to that side, thus causing a latero-version. If, on the other hand, the peritoneal covering alone was involved, prolapse and retroversion would result. Inflammation confined chiefly to the peritoneal covering of the utero-sacral ligaments, caused elevation of the cervix and anteversion.

In retro-displacement, the fundus was usually movable and could be replaced with the finger; after restoring the uterus to its supposed normal position, the operator would be able to feel a pulsating vessel, which showed that the circulation was obstructed in consequence of the adherent peritoneal surfaces and vessels being put on the stretch. If now a sharply curved pessary was introduced, there would soon be so much pain that it would be necessary to remove it; but if an instrument with a moderate curve was used, which simply corrected the prolapse, it could be worn longer, and would relieve the traction on the neck of the bladder, but in the end both pessaries would certainly cause peritonitis if allowed to remain long *in situ*.

In anteversion, from inflammatory shortening of the utero-sacral folds, we might indeed relieve the patient by means of a retroversion pessary which corrected the prolapse, but here, too, fresh inflammation would be the consequence of prolonged pressure on the affected liga-

ments. What then was the general practitioner to do? It was better not to attempt to correct the displacement, but to be content with hot water injections and the application of iodine and glycerine pads. Such cases were better treated in a hospital.

He then called attention to the peculiarities of the pelvic circulation, and to the fact that traction on the tortuous veins sufficient to straighten them results in dilatation of these vessels. Artificial traction on a healthy uterus causes an obstruction of the circulation; when the uterus is entirely procident, compensatory dilatation of the veins occurs. The arteries also lose their tone in consequence of extreme traction, and their calibre becomes diminished, thus relieving the over-distended veins. The pelvic connective tissue supports the vessels; a local peritonitis, by exerting undue traction on the connective tissue at one point, impairs its elasticity at another, and thus weakens the vascular support. He referred, in this connection, to so-called laceration of the perineum; the pelvic fascia is so injured that the vessels lose their proper support by reason of the general relaxation of the connective tissue. No operation on the perineum can give relief unless the normal tension is restored.

The object to be aimed at in fitting a pessary is to give just enough support to the over-stretched connective tissue to relieve the obstruction to the circulation. If a non-adherent uterus is replaced and the fascia is sufficiently supported, the natural elasticity of the periuterine tissues will keep the organ in position. He is accustomed to introduce a few cotton pledgets, simply to elevate the uterus to its normal plane, and thus to relieve the congestion; but he disapproved of the practice of introducing a large quantity of cotton, with the patient in the knee-chest position, since this is more likely to increase the existing irritation.

He stated in conclusion that, although he had pointed out the limited range of usefulness of pessaries, he is anxious that his views should not be misrepresented. In suitable cases nothing can take their place, but they should not be used without a clear understanding of just what they are intended to accomplish. A displacement of the uterus is rather to be regarded as a *symptom*, the cause of which must always be sought for. If this is done in every case, much less harm will result from the ignorant use of pessaries. Gynecologists were too apt to omit to search for evidences of pelvic inflammation, and to use the sound recklessly to correct a displacement, when the uterus can be replaced just as well with the finger.

DR. GRAILY HEWITT, of London, on being invited to discuss the paper, said that the subject of uterine displacement had occupied his attention for several years. He agreed with the spirit of Dr. Emmet's paper, but it seemed to him that there must be some difference between English and American women with regard to the relative frequency of pelvic cellulitis in cases of displacement. He had not detected it in many of his own cases, or else he had overlooked it. With reference to the causes of displacement, he thought that the reader had given a limited view of the matter, since he had touched on inflammatory causes only; but he inferred from the latter's book that he believed in the existence of others. Dr. Hewitt thought that the general causes were highly important, especially with regard to the pro-

phylactic treatment of uterine affections. Dr. Emmet had explained the sufferings of patients as due mostly to the pelvic inflammation. He thought that an important fact was the influence of flexions as causing obstruction to the circulation, and hence pressure on the nerves. The mere straightening of the uterus relieved the patient, perhaps more than the elevation of the organ. The speaker had met with cases of flexion in which there was extreme sensitiveness at the region of the os internum, and this pain was removed on straightening the uterus with the sound. It must be that the relief was due to the removal of the flexion. The speaker agreed with Dr. Emmet as to the unjustifiability of using pessaries when there was acute inflammation; but, when old indurations were present they might be valuable in removing such exudations. No man should use pessaries unless he thoroughly understands them. It was necessary to be familiar with the past history of the patient, as well as with the present local condition, before good could be done with these instruments.

PROFESSOR SIMPSON, of Edinburgh, said that the question of uterine displacement was especially interesting to teachers of gynecology. Dr. Hewitt had said that American and English women differed as regards the frequency of pelvic inflammation. The speaker differed from him, he believed that the diagnosis of gynecologists was modified by their individual opinions, since one man found inflammation very often, and another seldom. Dr. Emmet had taken a limited view of uterine displacements, since his paper dealt only with the condition in women who had borne children. Many sterile women had displacements. Pain was not the only symptom. In many cases it was necessary to replace the uterus in order to favor impregnation. We must not forget that in a certain class of cases no history of inflammation could be found. There seemed to be a growing disposition to abandon pessaries entirely; but, at the same time, even those who decried them, had certain cases in which they could not dispense with them.

DR. HEWITT explained that he did not express any positive opinions as to the difference between English and American women.

DR. BANTOCK, of London, said that he had been deeply interested in the paper, but he did not agree with the reader as to the frequency of pelvic inflammation. He thought that, as Dr. Simpson had said, a good deal depended upon the personal bias of the examiner. It had been shown that many cases of supposed pelvic cellulitis were really cases of salpingitis and peritonitis. The speaker was pleased to find that Dr. Emmet did not reject the use of pessaries. There was no advantage in trying to find out the exact cause of a uterine displacement; the patient wished to be relieved of her symptom, and in most cases this could be done by the *proper* adjustment of a pessary. Many men who used pessaries did not understand how to adjust them. In retroversion, following childbirth, no other instrument was necessary except the introduction of a pessary. The speaker always replaced the uterus with a sound, unless the organ was very tender, when it was necessary to relieve the inflammation first. When it was adherent, the pessary would not only be useless, but even injurious.

DR. EMMETT closed the discussion by saying that he

had not intended to disregard the ordinary causes of displacement, but only to discuss one which was little recognized. The failure to recognize cellulitis was due to the fact that patients were not examined by the rectum. He said that he had used the word "honest" purposely. He believed that many men used pessaries in this country who did not understand them and did more harm than good. No man used pessaries more than he did, but it was important to be able to distinguish cases which were unfit for them. He believed that there was more pelvic inflammation here than there was abroad. This was due to the fact that young women in America went into society earlier and were more exposed. Pelvic peritonitis was very frequent in young women and led directly to sterility. Displacements were common in young married females and often corrected themselves under the use of hot injections alone.

DR. SAMUEL C. BUSEY, of Washington, read a paper on

CYSTOKOLPOCELE, COMPLICATING LABOR AND PREGNANCY.

Cystokolpocele, or prolapse of the bladder, might be partial or complete, the latter blocked up the vaginal outlet. The size of the tumor depended more or less on the amount of urine in the bladder. Little attention had been given to this condition as a complication of labor. The literature was very scanty, only six cases of cystokolpocele complicating pregnancy having been reported in detail; one of these had occurred in the practice of the author.

He was called to attend a patient advanced in pregnancy and on making a vaginal examination was unable to find the cervix, the fingers entering a large, soft, blind pouch. The woman had not passed any urine since the previous day. On emptying the bladder, the tumor disappeared. The true condition ought to be suspected when there is dullness over the suprapubic region associated with the presence of a soft fluctuating tumor in the vagina, which disappears on emptying the bladder. Cases of cystokolpocele complicating labor were more numerous, the reader having collected thirty-five. The first stage was rendered long and painful, exhausting the patient. Errors in diagnosis are frequent. The bladder has been tapped under the supposition that it was a hydrocephalic head, and the bag of waters.

The etiology of the condition was mainly multiparity. The relaxation of the pelvic viscera led to vesical prolapse, but there must be some other cause. Hard work, muscular effort, etc., were active factors. Pendulous abdomen, relaxation of the vaginal canal, and retention of urine should also be mentioned. In a few instances cystoceles had existed before pregnancy. Contraction of the pelvis had been mentioned as a possible cause. Lingering labor was the principal symptom, the pains being sharp and frequent, but ineffectual, the pain being referred to the bottom of the stomach. Straining and tenesmus characterized the pain, as distinguished from ordinary labor-pains. There was usually a frequent desire to urinate. There might be no enlargement above the pubes. As labor advanced, the patient experienced severe pain and dragging sensations in the lower part of the vagina. On

making a vaginal examination, a soft, fluctuating, tender tumor was felt in the anterior vaginal wall, which became relaxed during the interval between the pains. Sometimes the os could be felt above the tumor. In lateral displacement a tumor would be felt on the lateral wall of the vagina, which would not block up the entire canal. The cystocele might assume an hour-glass shape, when the diagnosis was often difficult. Discharge of the contents of the tumor through the urethra was the only positive evidence of its character. The cystocele might refill during the labor.

The condition was to be distinguished from the amniotic sac, a hydrocephalic head, pyokolpocele, vaginal cysts, and ovarian cysts. Evacuation of the bladder by means of a soft catheter at once reduced the obstacle to delivery. It might be necessary to elevate the cystocele with the finger. No special treatment was necessary after delivery.

DR. GOODELL, of Philadelphia, said that he had met with two cases of cystokolpocele, one before and one during labor. He was completely deceived in the first instance, thinking that he felt the child's head, and that labor was in progress. There was severe vesical tenesmus, resembling uterine pains. On making a second examination the os uteri could not be reached, and the diagnosis was then clear. The bladder was rapidly emptied.

In the second case the pain was very severe, and the tumor was so large as to obstruct the passage of the head. It was impossible to pass the catheter until the head had been elevated by means of forceps. The speaker believed that in these cases there was some contraction of the pelvis, so that the sacral portion of the head was arrested, and the pubic portion, revolving with each pain, carried the bladder down before it.

AFTERNOON SESSION.

DR. WILLIAM M. POLK, of New York, read a paper entitled

ARE THE TUBES AND OVARIES TO BE SACRIFICED IN ALL CASES OF SALPINGITIS?

Salpingitis is to be defined, he said, as "the disorder whose most marked clinical expression is found to be those periuterine inflammatory masses so commonly met with when palpating the pelvic contents, which, until recently, were regarded as the sign manual of cellulitis." It is the affection heretofore treated as an inflammation of the periuterine cellular tissue. The inflammation is similar to that in the pleura, and results in either a serous exudation, which is absorbed, sometimes leaving slight adhesions, a sero-fibrinous exudation, which leaves numerous firm adhesions; or, finally, a collection of pus. The ultimate results of this salpingitis are determined by the strength and distribution of the resulting adhesions; if these are slight, the damage is slight. Displacement and imprisonment of the uterus and its appendages is the most important result whereby their functions are impaired.

The changes in the tube are endo- and peri-salpingitis, with resulting pyo-, hydro-, and hæmato-salpinx; while in the uterus there may be simply chronic endometritis or areolar hyperplasia. The ovaries, if buried in adhesions, may present interstitial changes, which finally lead to atrophy. But the ordinary form of salpingitis

mains, rather than destroys, the tubes, the maiming being due not so much to the primary disease as to the resulting adhesions.

The clinical evidences are those of localized peritonitis, which are followed by special symptoms resulting from the impairment of function in the organs involved.

These statements, the reader added, were based upon observations made both at the bedside and in the dead-house. In fifty cases, after making a careful physical examination, the abdomen was opened and the pelvis was then examined both from above and below, one finger being within the abdominal cavity and the other in the vagina. In fifty other cases the pelvis of the living subject was carefully examined, and then the results in the two series were compared, when it was shown that the local condition in both corresponded to the same disease—in short, the condition was that described in text-books as "pelvic cellulitis and peritonitis."

As regards the prognosis of salpingitis, it may be said that the majority of the cases recover, the death-rate being small in non-puerperal cases. Of course, recovery means restoration of health, not necessarily restoration of the function of the affected organs.

It was formerly said, that a woman with pyosalpinx was in danger of her life; but no distinction was made between the slighter and more serious cases. A year ago he would have performed laparotomy in all these cases. Since then he had met with numbers of specimens in which the adhesions were the principal trouble. The principal symptom was severe pelvic pain or dysmenorrhoea; recurrent peritonitis was not particularly frequent. It seemed as if the adhesions were the principal cause of the suffering, and that the pain might be relieved by freeing the adhesions. These might re-form, but if the uterus and appendages were so altered as to separate the ends of the adhesions, Alexander's operation has accomplished this result in the hands of the reader. Is it wise to leave an occluded tube without removing it? In certain cases this can be done. The reader had operated eight times, breaking up the adhesions around the displaced uterus and appendages, and restoring the organs to their normal position, where they were kept by shortening the round ligament.

In conclusion, the author said that he did not deny the value of the removal of the tubes and ovaries in proper cases, but he would confine the operation within narrow limits.

DR. MARTIN, of Berlin, said that he was pleased to see that the reader spoke of salpingitis generally as inflammation of the tube. Ten years ago, the speaker had called attention to the different forms of inflammation of the tube. The tube was rarely the seat of neoplasms. Carcinoma was rare, probably because of the absence of glands. Simple catarrh, being most frequent in the uterus, was also the most common inflammation in the tube. Recently micrococci had been found in the tube; gonococci were rarely discovered. Tuberculosis, as was shown by Hegar, was occasionally present. In general, the inflammations of the tube could be regarded as innocent; occlusion or adhesion to surrounding parts occurring early; but in only a small number of cases did the inflammation become general. Out of a large number of cases of salpingitis, the speaker had found it necessary to operate in only a small minority.

Only after a long course of anti-inflammatory treatment should we resort to an operation. Among eighty operations he had rarely found that the principal trouble was in the tubes. He was accustomed to puncture the tube in every instance before removing it, so as to prevent the contents from entering the cavity.

DR. BARKER said that he was deeply interested in Dr. Martin's reference to the good results of general treatment. In reply to a question from the last speaker, Dr. Martin said that in cases of acute inflammation he used ice-bags on the abdomen, with opium to relieve the pain. In chronic cases he applied iodine and peat-compresses. The general health was cared for, and massage was employed. Great care must be exercised not to set up fresh inflammation.

DR. EMMET said that he had always taught that in the majority of these cases the patient should have all the benefit of palliative treatment before an operation was performed.

DR. GOODELL said that he agreed substantially with the speakers. He was accustomed to resort to general treatment before operating. He did not understand how a collection of pus could be dispelled, even if a catarrhal inflammation could. He believed in Dr. Polk's pathological teachings, but he thought that his treatment was too heroic. After opening the abdomen, and liberating the ovaries and tubes, why not remove them, instead of trying any experiment? The patient could not become pregnant, and her instincts would not be removed by removing the organs. The speaker had thought long and anxiously on the subject. He often had gratifying results from the rest-treatment; but, on the other hand, he had been compelled to operate often against his will. He confessed that he could not tell what constituted exactly enough disease in an ovary to warrant its removal.

DR. BANTOCK said that his views coincided with those of Dr. Martin. He had come to the conclusion that ordinary cases of catarrhal salpingitis did not require operative treatment. But in pyosalpinx an operation would be necessary, sooner or later; even the latter cases might be cured spontaneously. The patient's symptoms were generally due to the surrounding peritonitis. Death was seldom due to rupture of a pyosalpinx. Hæmatosalpinx was more serious than pyosalpinx. The speaker had come to be very cautious in removing the ovaries, since, in several instances, he had seen pregnancy occur in women whose organs were apparently hopelessly diseased. He did not approve of Dr. Polk's operation, since, if adhesions had once been formed, there was no reason to think that they would not reform. If the appendages were so buried in adhesions, they were probably so much diseased that they ought to be removed. In reply to a question as to his method of general treatment, Dr. Bantock said that during the acute stage of inflammation he kept the patient absolutely quiet, administered hot douches, and gave opium.

DR. SUTTON, of Pittsburg, said that the subject of tubal pathology was still *sub judice*. He thought that if we laid down the rule only to operate when there was a tumor we should certainly neglect cases in which an operation was urgently needed. If pus was present in a tube, that tube should be extirpated just as an abscess anywhere else in the body ought to be incised. How

many abnormal conditions of the tubes and ovaries would be cured spontaneously we could not tell. We must take into account the entire condition of the patient. We could not say what the result of an operation would be until months had elapsed. If the patient suffered from the presence of an ovary and tube, what was the use of leaving it? It is not necessary to discover just what the disease was; if the patient was cured, that was the main thing.

DR. EMMET thought that in many of these cases the trouble was really due to anæmia and general depression. The woman was better after removal of the appendages, but it was due to the fact that the menopause was induced. It was a reflection on the profession to think that we must remove the ovaries in order to cure anæmia.

DR. WYLIE, of New York, said that he did not dread cases of salpingitis as he did seven years before, when he first began to operate. He selected his cases carefully, not operating in more than one out of ten. He had not ventured to perform the operation described by the reader, although in two instances he had opened the abdomen and simply broken up adhesions, since the appendages were not diseased. Constitutional treatment was not enough in these cases.

DR. POLK closed the discussion with the remark that he had not desired to give prominence to the question of laparotomy, but to that of *mutilation*. Women had a right to retain organs which did them no harm. The main point in his paper was that the tubes and ovaries were crippled by adhesions, and were not functionally useless. He did not oppose extirpation of the organs in proper cases, but it was important to discover some way in which women could be spared if possible. None of his patients had died after the operation, so that the question of safety could not come in. Nor did the performance of Alexander's operation, in addition to the laparotomy, entail any extra risk. Every woman had the right to take the chance of saving her ovaries.

DR. PAUL F. MUNDÉ, of New York, then read a paper entitled

DRAINAGE AFTER LAPAROTOMY.

He made the prefatory statement that, while general surgeons were unanimous with regard to the advisability of draining secreting cavities, he was surprised to find on reviewing the literature of the subject, as well as by reference to his observation of operations performed by prominent European laparotomists, how widely diverse were the views as to the necessity of abdominal drainage after the removal of adherent tumors. Some operators invariably used a drainage-tube in such cases, while others, who obtained just as good results, rarely or never employed one; among the latter were Olshausen, Martin, and Tait. Hegar omitted drainage except in cases of extensive oozing or exudation, where a quantity of septic fluid escaped into the peritoneal cavity, or when it was probable that ligated adhesions or cyst-remains might become gangrenous. Olshausen was strongly opposed to drainage, considering it directly responsible for septicaemia, tedious convalescence, and subsequent abdominal fistulae. He, himself, had seen excellent results in Martin's clinic in cases of extensive adhesion when the tube was dispensed with. Referring to his own experience, he said that he had employed

drainage in twenty-three out of sixty laparotomies, with twelve deaths, while of the other thirty-seven, in which no tube was used, only three died.

The following questions were proposed for discussion:

1. In what class of cases does drainage seem to be theoretically necessary?
2. What are its advantages, and what its dangers and disadvantages?
3. What form of drainage is the best and least dangerous?
4. What substitute can be offered for drainage, or how can the necessity for its employment be averted?

The original object aimed at by Dr. E. R. Peaslee, who first introduced the use of glass tubes after laparotomy, was to favor the escape of blood and serum from the abdominal cavity; this purpose was still effected, but practically we find at the present day that it is not always necessary to remove the exudation, which is most apt to accumulate in cases where extensive adhesions have been separated. If by our modern antiseptic methods this fluid can be rendered innocuous, drainage may be dispensed with, since the peritoneum is able to absorb it without injury to the general system. However, as long as there remains any doubt as to the aseptic character of the fluid, drainage is indicated, at least theoretically.

Concerning the justifiability of drainage, there could be no question that it was criminal negligence to allow septic fluid to remain within the peritoneal cavity, when it could be removed. In considering the dangers we must bear in mind how much more serious a matter it is to drain the peritoneal cavity than an ordinary surgical wound. It is true that a wall of lymph was easily formed around the tube, thus separating it from the surrounding intestines and protecting the latter against external influences, but there was ample time for septic infection before this protecting lymph was thrown out. It could not be denied that the presence of the tube prevented the perfect closure of the abdominal wound, and thus added to the danger. He had often been glad that he had introduced a tube, because of the quantity of bloody serum that escaped soon after the operation; but might not this fluid have been innocuous if it had remained? Was not the danger from its presence more than counterbalanced by the added risks of septic infection, traumatic peritonitis, and subsequent intestinal adhesions entailed by the presence of the tube, as well as the alarm and annoyance caused to the patient from the frequent removal of the accumulated fluid? The tube, certainly, causes more or less irritation; in fact, he had noted the occurrence of reflex vomiting in one case, which ceased as soon as the tube was removed. After the first forty-eight hours, when the fluid had become merely serous in character, it was better to dispense with it. Abdominal fistulae and ventral hernia sometimes resulted directly from the use of the tube.

The simplest form of glass drainage-tubes were the best; lateral perforations were objectionable, since omentum, or even small intestine, might be imprisoned in the holes. Mikulicz used a strip of iodoform gauze. The fluid could be removed from the tube by means of a rubber tube attached to a syringe; it was seldom necessary to examine the tube within twelve hours after the operation. He thought that it was often left in too

long, from forty-eight to ninety-six hours being the limit. The formation of a permanent fistula was prevented to some extent by introducing a deep suture at the site of the tube and tightening it as soon as the latter had been removed.

While he substantially agreed with Olshausen in his condemnation of drainage after laparotomy, he did not think that the latter was correct in advocating the shutting up of a portion of an adherent cyst within the cavity without providing for the escape of the fluid which must inevitably be secreted; there could be no safer plan than that of stitching the adherent sac into the abdominal wound, packing its interior with iodoform gauze, and allowing it to close by granulation. Was there any substitute for drainage? Some authorities claimed that it was unnecessary if rigid antisepsis was observed during the operation and the peritoneal cavity was carefully cleansed before closing the wound; they affirmed, and with reason, that the presence of the tube really kept up the serous exudation. Schröder, Martin, and Olshausen had found that if large raw surfaces were placed in contact they would become agglutinated without much oozing or exudation. Moreover, a small quantity of pure blood, bloody serum, or cyst fluid might safely be left within the peritoneal cavity, *provided all possibility of septic infection from without was prevented*; prophylactic drainage in these cases was not only unnecessary, but it introduced an element of danger. Where it was desirable to drain, the reader suggested the employment of a strip of gauze, which could be pushed up through the vaginal roof into Douglas's pouch. Two indispensable conditions must be observed if drainage was to be omitted, viz.:

1. The peritoneal cavity must be thoroughly cleansed by careful sponging, the viscera being protected by means of flat sponges or layers of sublimated gauze, and by washing out the pelvic cavity with an antiseptic solution poured from a pitcher.

2. Rigid antisepsis must be observed in all the details of the operation.

DR. MARTIN, of Berlin, said that he did not employ drainage in ordinary cases of ovariectomy, but only where there was some complication. He used it in cases of supravaginal amputation, vaginal hysterectomy, and where large sloughing surfaces were left after the removal of adherent tumors. In the latter case, he always drained through the vaginal fornix, using a rubber tube, but he did not use injections.

DR. BANTOCK said that he had long been interested in the subject. He was so confident of the value of drainage that he used it whenever there was the slightest excuse—*i. e.*, when there had been many adhesions, or there was much fluid in the cavity. He used simple warm water for washing out the abdomen, having long given up so-called antiseptics. He substituted perfect cleanliness for them. Of his last 104 cases, he has lost only three, and this success he attributed to the frequent use of the tube. He used the ordinary straight glass tube introduced through the abdominal wound, and emptied it every two or three hours. The tube should not be removed until the serum became clear and free from blood.

DR. GARDNER, of Montreal, had used drainage-tubes extensively, and was thoroughly convinced of the value of Dr. Bantock's teachings with regard to leaving them in for a long time.

DR. WYLIE called attention to the fact that the drainage-tube was useful as giving an early indication of hemorrhage after laparotomy. He agreed with Dr. Bantock in preferring a straight glass tube.

DR. GOODELL said he was sceptical as to the value of the drainage-tube. He had had several cases of ruptured colloid cyst in which the abdomen was not washed out, no drainage was employed, and yet the patient recovered. He agreed with the last speaker in regard to the value of the tube as furnishing indication of hemorrhage. At the end of twenty-four hours the drainage was imperfect, as described by the reader.

NEWS ITEMS.

THE MEMBERS REGISTERED AT THE CONGRESS.—About 2600 members were registered. We append a list of the *foreign members*.

Argentine Republic.—Dr. Villa.

Australia.—Balls Headley.

Austria.—T. v. Metnitz, A. Natchtch.

Belgium.—L. Servais, R. Guilet.

Brazil.—Dr. Freire.

China.—H. W. Boone, E. T. Barbieri.

Costa Rica.—F. M. Calruck.

Cuba.—V. Galluzzo, C. M. Desvermine, Vincent Galwiza, Dorno F. Hubas.

Egypt.—Grant Bey.

France.—A. Charpentier, W. M. Ouacher, Léon Le Fort, Recamier, Kuhn, G. Apostoli, P. Englade, Q. Duprez, Villa, Dolores, Landolt, Ch. Abadie, A. Doléris, L. Keese.

Germany.—Mooren, A. Mowfin, A. Martin, P. G. Unna, H. E. Keatz, Donau, A. Olliven Busch.

Great Britain.—Grailly Hewitt, C.D.F. Phillips, W. H. Lloyd, Blandford, J. A. Marston, Brig. Surg. John Anderson, Tobin, H. D. Ellis, W. E. Balknill, W. Bowman MacLeod, J. J. Murphy, J. F. Taylor, James Buxton, R. N. Bower, Jos. Walker, W. H. Cross, J. L. Wood, Walter Campbell, W. W. Woodruff, W. E. Harding, I. E. Clifford, Charles Gaine, L. Browney, Wm. Murrell, R. Stockman, W. L. Stewart, S. R. Roberts, F. W. Pavy, Surg. Maj. G. F. Langridge, Leslie Fraser, R. M. Barr, A. Dobell, J. J. Wellford, A. Crawley, J. C. Hewlett, Nelson Dobson, Shingleton Smith, Thos. Leur, J. B. Willard, J. T. Donald, J. B. Hurly, T. N. Dolan, S. T. Riggs, Alfred Gubb, Y. R. Le Monnier, Thomas Lyman, J. B. Hilliard, J. T. Donald, J. Chapman, Henry Powers, J. C. Leach, A. P. A. Lawrence, D. Dalton, R. Marrick, W. H. Hayran, R. J. Mills, A. Ballard, W. M. Whitmarsh, H. Saville, A. Eddwards, Parkinson, J. C. Hewlett, Walton Brown, Boyd Pall, S. Willis, Roger Parker, Sinclair Coghill, Duncan McAlum, A. R. Simpson, Leishman, D. Lloyd Roberts, Chenholm, Edmund Owen, Edward East, Thos. Neville, Logan, A. W. Edis, G. Thin, John Sutcliffe, W. A. E. Hippisley, Robert Hunt, John Ince, John Oliphant, Lionel A. Powell, John Sprewell, R. E. Rouse, C. B. Richardson, W. B. Tate, E. Seaton, G. G. S. Taylor, Henry Tompkins, Thomas Chapman, L. D. Alexander, J. G. McDowell, Alex. Morrison, Blair, Pollok, I. Wedgewood, W. L. Reed, R. N. Bower, D. Drysdale, I. Chapman, J. W. Longbottom, S. Swithembank, J. Swithembank, S. Benton, D. Yellowlees, Mac Gregor, Jos. Harrison, J. L.

Downe, Wood Smith, A. N. Smith, Lennox Browne, Matthews, F. Pritchard, R. H. Woodhouse, A. Hendriks, B. P. Neub, Boninger, R. Dunn, P. Galeden.

Holland.—J. G. Grevers.

Hungary.—L. V. Farkas, Jos. Korosi, Gustav A. Dirner.

Italy.—E. D. Rossi, Semmola, F. Durante, Freeman.

Japan.—Dr. Saiga.

Mexico.—F. Paschal, Alvarado.

Norway.—Ole Bull.

Poland.—Frank Graer.

Roumania.—Assaky.

Russia.—Chas. Reyher, S. Poerschky, W. N. Korff, E. A. Homer, A. Limberg.

South Africa.—J. W. Mathews.

Spain.—Dr. Lalearda.

Sweden.—Ernest Sjöberg, G. Tillmann, X. Watraszewski.

Switzerland.—Cordes, N. Manolescu.

Turkey.—Dr. Post.

A NEW LABORATORY FOR BACTERIOLOGY AT KING'S COLLEGE.—MR. EDGAR CROOKSHANK, M.B., has been elected Professor of Bacteriology, and the plans for a new bacteriological laboratory, to be built during the vacation, have been decided on.

VACATION COURSES IN VIENNA ABANDONED.—The vacation short courses of practical instruction for medical men, which have been held for many years past during the months of August and September, are about to be stopped. The prospectus of these courses, numbering more than fifty, had already been published when this decision was arrived at.

HYPNOTISM IN TEMPERANCE REFORM.—At Soissons, France, a drunkard of local fame for inebriety, was hypnotized by a mesmerizer, and was obliged, by the "suggestions" of the latter, to refrain from drink. Whether the "suggestions" of convivial friends arising later did not undo the temporary reform is not stated.

INSANITY AND INTEMPERANCE.—There were 1626 persons of both sexes in the insane hospitals of Pennsylvania for 1886. Of this number only 2 were dipso-maniacs, 8 were opium cases, 1 of cocaine inebriety. 123 are put down to intemperance.—*Quarterly Journal of Inebriety*, July, 1887.

IN MEMORIAM.—At a special meeting of the Auxiliary Faculty of Medicine of the University of Pennsylvania, held September 5, 1887, the following resolutions were adopted:

Resolved, That this Faculty has received with the profoundest sorrow the intelligence of the sudden death of their esteemed colleague, Doctor Nathaniel Archer Randolph, late Professor of Hygiene in the University of Pennsylvania.

Resolved, That in the demise of Professor Randolph this Faculty has been deprived of a most faithful and zealous co-worker, endeared to them by the uniform courtesy and gentleness of his deportment; and that the University has lost a Professor of great merit and of brilliant promise, and one most acceptable to the students under his charge.

Resolved, That this Faculty begs to tender to the widow and family of their late colleague the sincerest sympathy and condolence in this afflictive bereavement.

NOTES AND QUERIES.

IPPECACUANHA IN LABOR.

To the Editor of THE MEDICAL NEWS,

SIR: When I was a medical student, in 1879-80, my father, Dr. D. O. Baird, of Pickens County, this State, taught me the use of ippecacuanha as a uterine motor stimulant, and he informed me quite recently that he has so used it for fifteen years, and has had no cause to be displeased with its action. He considers it specially indicated when there is a full habit and rigid os. He gives it in two to three grain doses.

Respectfully,

W. J. BAIRD.

BIRMINGHAM, ALA., September 7, 1887.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM SEPTEMBER 6 TO SEPTEMBER 12, 1887.

BANISTER, W. B., *First Lieutenant and Assistant Surgeon*.—Granted leave of absence for one month, with permission to apply for an extension of one month, to take effect upon the arrival at Fort Lowell, of Assistant Surgeon J. B. Girard.—S. O. 977 par. 4, *Headquarters Department of Arizona*, August 29, 1887.

BYRNE, C. C., *Major and Surgeon*.—Detailed as a member of the Army Retiring Board in Washington City, vice Captain Washington Matthews, Assistant Surgeon, relieved.—S. O. 208, par. 2, A. G. O., September 7, 1887.

O'REILLY, R. M., *Major and Surgeon*, U. S. Army.—Ordered to proceed to Fort Niagara, New York, on public business, and on completion thereof, to return to his proper station, Washington, D. C.—S. O. 205, par. 10, A. G. O., September 3, 1887.

PERLEY, H. O., *Captain and Assistant Surgeon*.—Ordered to accompany battalion of the Twenty-third Infantry from Fort Wayne, Michigan, to Chicago, to participate in the International Military Encampment, to be held in that city in October next.—S. O. 191, par. 1, *Headquarters Division of the Atlantic*, September 8, 1887.

SUTER, WILLIAM N., *First Lieutenant and Assistant Surgeon*.—Ordered to accompany Battery E, Third Artillery, from Washington Barracks, D. C., to Philadelphia, on the 14th instant, to participate in the military parade, during the celebration of the Centennial of the Adoption of the Constitution, September 15, 16, and 17, 1887.—S. O. 191, par. 3, *Headquarters Division of the Atlantic*, September 8, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING SEPTEMBER 3, 1887.

DEAN, RICHARD C., *Medical Director*.—Detached from duty as a member of the Examining and Retiring Boards, and ordered to Hospital, Chelsea, Massachusetts.

PECK, GEORGE, *Medical Director*.—Orders as delegate to the International Medical Congress revoked.

SIMONS, M. H., *Surgeon*.—Detached from the "Constellation," and ordered to the Naval Academy.

ROGERS, B. F., *Surgeon*.—Detached from the Marine Rendezvous, New York, and ordered to the "Alliance."

FIELD, JAMES G., *Assistant Surgeon*.—Detached from the "Vermont," and ordered to the Marine Rendezvous, New York.

HENRY, C. P., *Assistant Surgeon*.—Ordered to the "Ossipee."

LUMSDEN, G. P., *Passed Assistant Surgeon*.—Ordered to the "Boston."

ATLEE, LOUIS W., *Assistant Surgeon*.—Restored to duty.

THE MEDICAL NEWS will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS should be addressed to No. 1004 Walnut Street, Philadelphia.